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JUNE, 1890.

ROSE CULTIVATION, to the amateur gardener, is beset with difficulties of two kinds. One being that of injurious insects, and the other that of the necessity of pruning. The destruction of the insects that usually infest the Rose can be so surely and easily accomplished, and the methods therefor have been so frequently stated in detail that it would seem that there is little occasion for any one to forego Rose cultivation on this account. And yet it is true that with the mass of the people who plant Rose bushes, and to this extent attempt their cultivation, the "line upon line" that has been written on this subject has almost failed of any good results. The preparation to meet the attacks of insects is postponed, and when they come it is like "a thief in the night." Unless keeping a close watch for them, before one is aware they have accomplished much mischief, and then, perhaps, instead of acting promptly to subdue them, at the most there is only a half-formed resolution to be ready for them another year, and they are left to

do their worst. Perhaps, for a season or two, some flowers are secured, but sooner or later, in many cases, they are left a prey to the insects.

There is no more satisfactory plant than the Rose, and none more easily cared for. An annual enriching of the soil, winter protection where needed, destruction of injurious insects, and proper pruning constitute the essentials of its cultivation. In the first place, if the plants are provided with plenty of fertilizing material in a form that they can take up and assimilate when they commence to make their first growth in the spring they will, by their increased vigor, be better able to sustain themselves against mildew or insects; thus enriching of the soil secures at the same time the ability to produce more and better flowers, and to contend against parasitic adversaries. Well rotted stable manure or the commercial phosphates will supply the needed nutriment. A garden syringe, and some whale oil soap with which to make a solution in water, are pretty much

all that are needed to fight insects with ; the soap water will destroy the green-fly and the slug, and keep at bay the little rose-hopper or thrips, and while used principally against these insects it will impede the work of some others. If the leaf-roller should appear to be active about the time the buds are filling, it can be crushed between the leaves, looking the bushes over carefully for this purpose.

The correct pruning of Roses must be based on the fact that the flowers are produced on the new wood. To keep up a supply of new wood is the point to be aimed



A ROSE ARCH.

at. The new shoots grow from those which were produced last and have become hard and ripened, as it is technically called. The spring pruning should be deferred until the most severe weather is past, but it should be done while the buds are yet dormant. The skill to decide how much wood to remove can be acquired only by experience. A strong, vigorous plant can be allowed more proportionately than a weaker one. If a few large blooms are wanted, prune short, but for the greatest quantity, prune long. To get any good results from Climbing Roses pruning must be attended to systematically every year, and it is for want of this attention that they so speedily become ill-looking. With proper pruning most beautiful effects can be produced with them on walls, pillars or trellises. The present illustration of an arch of Roses first appeared in the *London Garden*. In the severe northern climates the varieties of the Prairie Rose are the only suitable climbers.

FAMOUS TREES AND FORESTS OF CALIFORNIA

In all the host of books about California—stories of pioneers, impressions of tourists along the beaten highways—hardly one has the atmosphere of the great tree districts, the oak forests, the regions of the giant conifers, the hill-slopes and mountains which GRAY and HOOKER traveled thousands of miles to visit. There is a California of the photograph store—Yosemite, the Geysers, the Cliff House, the Missions and old coast towns—there is another California of the wilderness, where hunter, fisherman and botanist are at home.

Then, too, in almost every district of the State, a few trees are already famous in local traditions, and are destined to become still more famous hereafter. The Tuolumne Oak, the Palo Alto Redwood, the Felton Giant, and many others familiar to Californians, are worthy of record here. Even in the greater wilderness, penetrated only by stage roads and horseback trails, the pioneers show the traveler trees of peculiar beauty, unusual size, or strange growth, and some of these will doubtless remain when the rest of the forest disappears. Some day, every village in California will have its noted tree.

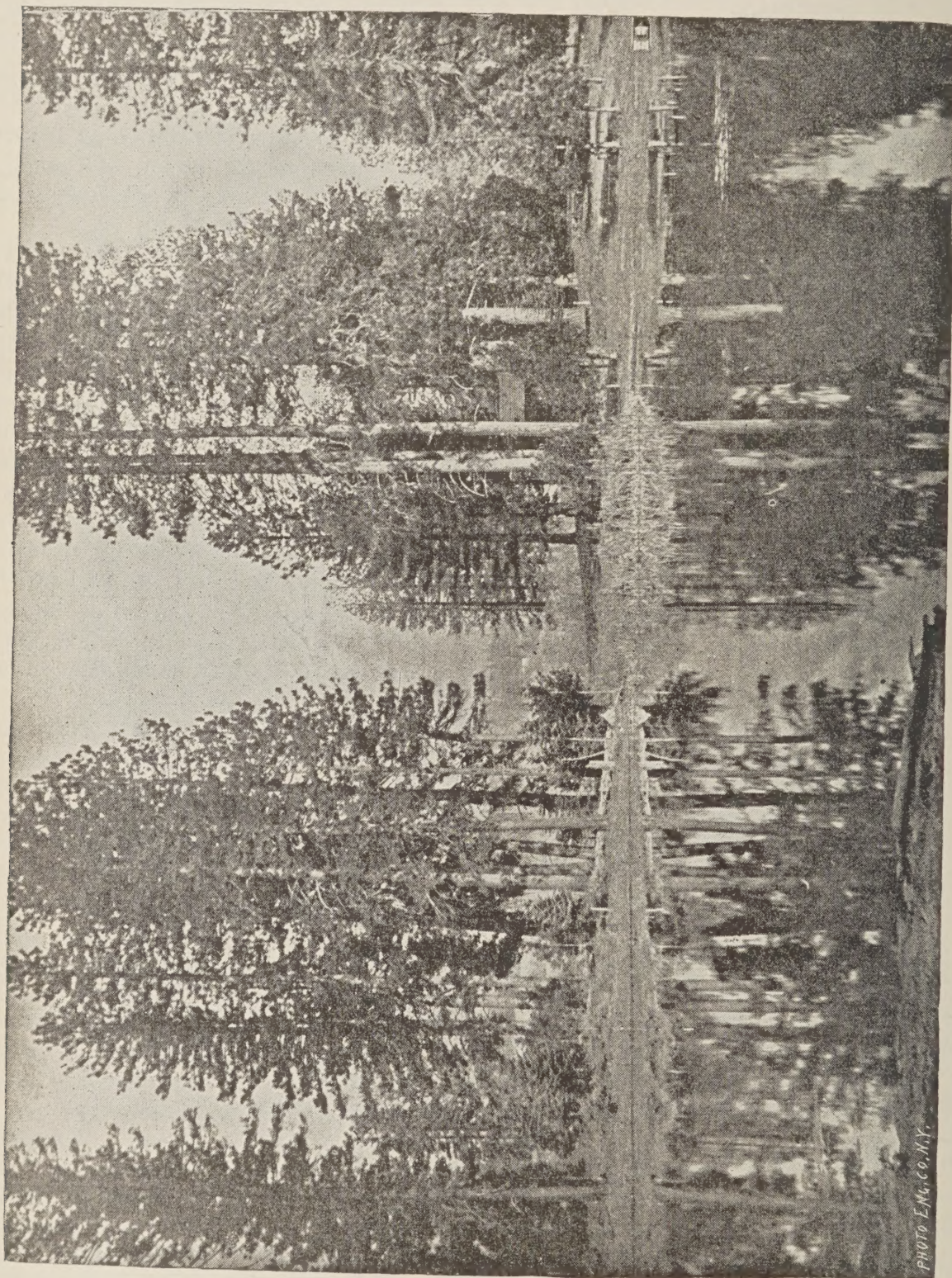
The Pacific coast forests are grouped along the western slopes of the Sierra, from Kern to Siskiyou, and along the axis of the coast range, in more broken and varied masses from Santa Barbara to the Klamath. Some of the most beautiful of oak forests in California are in Ventura, Los Angeles and San Diego counties, and many important groups of Pines still remain in the San-



PALO ALTO
(Tall Tree.)

Bernardino mountains, but the greater forest groups are farther north. One magnificent forest of Oaks, Madronas, Maples, Pines and Redwoods begins on the head

waters of the Pajaro River, and extends, with occasional openings where vineyards and orchards are planted, to the heart of the San Mateo Mountains, within sight of San Francisco. Another forest, small, but very attractive to the botanist, clothes the cañons of northern Marin, and can be reached in less than three hours from San Francisco, while, after a brief break on the windy hills of the Tomales region, the great redwood forests begin, and extend northward for more than two hundred



PINES AT SISSON LAKE, MT. SHASTA.

miles. The head of the Sacramento Valley, from Redding east and south, for twenty miles, was formerly a magnificent oak forest, and thousands of acres still remain in that district. At Chico the great White Oaks make the region like an old English park for miles. About Mount Shasta much of the primeval coniferous forest of Sierra Pines still remains in perfection. All the Sierra counties, from Plumas south, have many groups of virgin forests still far from railroad lines. I shall speak again of some of the great forest groups in the course of this article.

The famous single trees are notable in various ways, some for size and beauty, others for historical significance. One of the most widely known of late years is the Palo Alto Redwood. It was formerly a superb group springing from one root. As late as 1860 two trees remained, but now there is only one. It stands on the broad highway from San Francisco to San Jose, by a bridge across a stream in the middle of the valley. This tree names the Palo Alto estate, where LELAND STANFORD is establishing his University. Toward the west, in the midst of White Oaks and Live Oaks, beyond wide acres of orchard, the Mission-like buildings of the University

stand on a sunny slope east of the wooded San Mateo hills. Eastward, beyond the blue expanse of the Bay of San Francisco, lie the Alameda and Contra Costa hills, and the heights of Mission Peak and Monte Diablo. In all this region the most famous old landmark is the Palo Alto tree. It is not a large tree of its species. On the seaward slopes of Sonoma, San Mateo and Santa Cruz there are Redwoods that will easily girth from forty to forty-five feet, while the Palo Alto is hardly fifteen. But it is the only Redwood in the valley, and it was named by some of the first Spanish settlers of California a century ago. It was a noted tree before there was a fence or an American in the valley. Wild Oats and wild Mustard then spread in seas of silver and gold from Mission Santa Clara to Mission Dolores. Peon and padre rode along the trails and guided their course for miles by



LONE TREE.

the landmark of the Palo Alto, or made their camping ground by the stream that flowed beneath its branches. Later, when the pioneer Americans began to settle in the valley, the great tree became the winning-post for many a country-ride race, prophetic, surely, of the time when the colors of the Palo Alto stables should be known on all the great race tracks of the United States.

The famous single tree of a district is often a giant Redwood, such as the Felton tree, or the Guernville titans, sometimes an Oak, or Sugar Pine, or Cedar, but always a tree that is worth measuring and describing. The largest of the Redwoods, near Santa Cruz, is over three hundred feet high, and sixty-three feet in circumference of the trunk. It stands in a grove of twenty acres of magnificent Redwoods, and is the pride of the county.

The sites of old Missions and Spanish residences of a century ago are often marked by superb single trees, planted for fruit or shade. At the Mission San Jose, Alameda county, there is an avenue of about forty old Olives. They were planted in 1798, and the largest one girths six feet and ten inches. Seedling Pear trees of about the same age and size are in the same garden. The Date Palms of San Buenaventura and San Diego were planted by the Mission padres. The old Olives of San Luis Obispo are equally famous. Some of the Missions have old fig avenues that date back three-quarters of a century. The Palms planted by some miner on a hillside, near the ancient town of Shasta, are now so large and stately that they are noted all over Northern California. The Wolfskill Palms, near Winters, now bear Dates every season, and are the most famous trees in that region. The largest Cherry tree in the State was planted by a miner, in Placer county, in 1853, and has yielded more than a ton of

Cherries in a single crop. The finest Australian Eucalyptus of its age in California is probably one that grows on Alameda Creek, within thirty miles from San Francisco. It is seventeen years old from the seed, and now measures one hundred and fifteen feet in height, and girths nine feet eight inches. It stands where it need not be disturbed, but can be left to grow and broaden for centuries to come, perhaps at last to rival those Australian giants of which Baron VON MUELLER writes, that they sometimes tower nearly five hundred feet in the air, the tallest members of the vegetable kingdom.

The common Elder bush of the Atlantic States becomes a tree in California. It is



SECTION OF THE GIANT, BIG TREE STATION, FELTON.

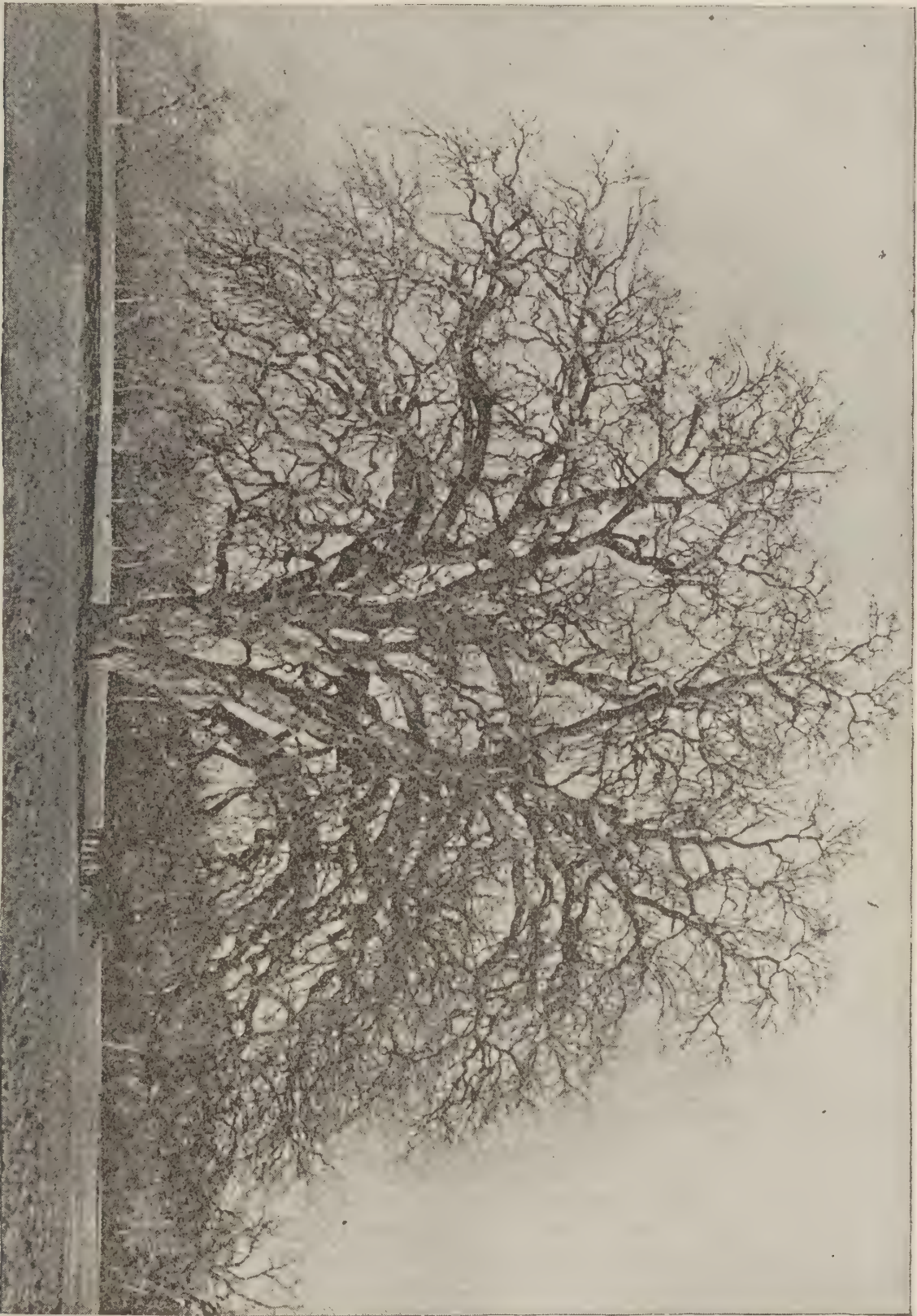
common to find Elders of twenty feet in height growing along the water - courses. Sometimes Elder trees of such age and size as to attract much attention are found in the rich valleys. One of local reputation measures twelve feet nine inches in girth, and the branches spread over a circle fifty feet across. The California Buckeye is also a tree of good size in the valleys, and when in bloom is a beautiful object. Trees of eight and ten feet in girth are not infrequent. Several towns have their famous Buckeyes and Elder trees. The native Madrona, or Red Bark, perhaps the

most characteristic of Pacific coast trees, is not, as a rule, large, but occasional specimens reach such a size that they seem like evergreen Oaks with scarlet stems. and become famous over whole districts. The large, Magnolia-like leaves, brilliant bark, and gay autumn berries make this tree one of the most beautiful in California.

The Oaks of the Pacific coast have attracted the attention of botanists and lovers of beautiful trees for many years. No other country possesses so great a variety of Oaks, nor larger and more stately single specimens. Oak forests constitute the greater charm of many districts of California. The great Sir Joseph Hooker Oak, on General JOHN BIDWELL'S Chico ranch, is considered the finest White Oak in the State, and it has begun to have an even wider fame ever since it was named by Dr. C. C. PARRY, after HOOKER, the English botanist, during his visit to this coast. Its boughs cover a circle of sixty feet radius. Another superb Oak is at Bonnyview, Shasta, on the Sacramento River. There is an Oak in almost every foothill village of California that bids fair to last for centuries the pride of the region. Nothing in

the way of natural scenery is more impressive, on the whole, than the great park-like expanses, the groups and masses of grand Oaks of several species that shelter so many Californian homes and glorify the whole landscape.

The Redwoods that stand on the borders of Marin, within sight of San Francisco, mark the scattered fringes of what the botanists call the most splendid and valuable



THE SIR JOSEPH HOOKER OAK, IN FEBRUARY.

coniferous forest known on the face of the earth. It reaches north to Puget Sound, and far beyond, across British Columbia into Alaska. Redwoods rule in California, but then the Spruces, Firs and Pines carry on the great forest to the Arctic circle. Like the deep Andreswald, of England, in the days of HENGIST and HORSA, like that German forest that turned back the Roman legions, this vast coniferous forest is the one great physical fact of an immense region. If the tracts that still belong to the government are withdrawn from public sale and preëmption, and if wise for-

estry laws are enacted and enforced, California will have ever-enduring forests. Otherwise, in twenty years the best portions of this gigantic forest will be destroyed beyond restoration. The forests of Sierra Nevada, covering a more limited area, but protecting the sources of a far greater number of streams, and comprising species of trees far more difficult to reproduce from seed, are in danger of far more rapid destruction.

The Pacific coast forests contain fifty-two species of conifers, and twenty-seven or twenty-eight species of Oaks, beside Maples, Ashes, one native Walnut, Sycamores, Madronas, Buckeyes, and a great variety of smaller trees and shrubs. Aside from the Redwood, the tree of the coast lands, the most valuable species grow in the



BUCKEYE AT EL YERANA, SONOMA.

Sierras. Botanists have divided the great Sierra forest into three belts, according to species and altitude. On the lower or foothill belt grow the Oaks and the *Pinus Sabiniana*, or Nut Pine. The forest is sparse and poor, and the six thousand five hundred square miles of this region is of more value for orchards and vineyards, for Olives and Oranges, and similar horticultural productions. This belt extends from the valleys to a height of two thousand feet above the sea. The second or middle forest zone extends to a height of four thousand feet, and has an average width of fifteen miles. There are fine Oaks here, also, but fewer in number. The poorer Pines of the foothills disappear, and the Yellow Pine takes their place. This Pine grows to a height of from one hundred to two hundred feet, often with a girth of from twenty-one to twenty-six feet. The Black Pine, the Red and Yellow Firs, the fragrant Cedar, the California Nutmeg tree and some Sugar Pines form the bulk of the rest of the forests of this zone. The third or upper zone of the Sierra includes the region above four thousand feet. The forests of this zone reach to an altitude of eight thousand five hundred feet, and form the grandest mass of giant conifers in the world. The Yellow and Sugar Pines enter it from the lower zone, and increase in size and numbers until the height of six thousand feet is reached; then they give place, to some extent, to giant Firs and Spruces. At a height of ten thousand feet the Alpine species of Pines and the Junipers form the forest.

The Sugar Pines of the Sierras is the most superb of all the Pines, and the territory it occupies, from an elevation of three thousand feet to one of eight thousand, is, beyond doubt, the most interesting portion of the mountains for campers, tourists or botanists. Specimens have been measured that were forty feet in circumference, and three hundred feet in height. This Pine has a smooth, round and columnar

trunk, rising without limbs for two-thirds of its height. It is the most valuable timber tree of the Sierras, is rapidly disappearing, and is not well represented among the younger growth of the forest. A few large trees, growing on private estates, will remain to be famous generations hence over whole counties. DAVID DOUGLAS, the discoverer of this species measured a fallen tree whose circumference at three feet from the base was nearly fifty-eight feet. Trees of two hundred and fifty feet in height can be found still standing near some of the old towns of the upper Sierra region. In wonderful contrast to these giants of the California forest are the dwarf Pines that grow from the limits of the third climatic zone of the Sierras to the very base of the glaciers. JOHN MUIR once cut a dwarf Pine whose trunk was three and a half inches through, and counted four hundred and twenty rings. The little tree was tough as a whip cord, as it had need to be in the Alps of California, on the very limits of eternal snow.

The great forests have enemies of many sorts. Insects and fungi, though harmful, destroy but a small part of the forests. Fires, either set by cattle men to burn brush, or the result of carelessness, sweep thousands of acres away every year. The State Forestry Commission posts notices all over the mountain districts, and employs detectives and special agents, but still the loss from this cause is something frightful. Rainless summers dry the grass until it is like tinder. Then the least thing starts it ablaze, and it burns for days, perhaps in Pines that will average eight or ten thousand trees of twelve feet girth to every square mile. Every autumn the smoke from mountain fires clouds the air, and fills the upper valleys with a dim haze; it hangs about the bases of Lassen, Yalla Balla and Shasta; it even creeps down to Sacramento and San Joaquin plain.

A greater enemy than fire, however, is to be found in the pasturage of the government lands of the Pacific coast States by cattle and sheep. They destroy the young trees, they trample the surface of the ground so hard that seeds cannot grow; they gradually drive many delicate species of plants from existence. Over-cropping the Sierra pastures is the most decisive cause of the lack of recuperation which, many districts of the Sierra forests show. Even the lumberman, with his machinery, portable mill and ox teams, does less harm than the sheep herder, for the trees do to some extent, grow up again in his track. In a state of nature the Sierra forests are carpeted with infinitely varied growths, trailing vines, flowering plants, bulbs and dwarf, moss-like grasses and perennials. You walk for miles in a fresh, sweet paradise, full of delicate odors and lovely plant forms. The moment that such a region becomes a sheep pasture most of the minor plants that carpet the ground for miles begin to disappear. In ten years they are no longer to be found, even by the sharpest-sighted botanist. Coarse weeds occupy the place of lovely wild flowers and ferns. I remember places in Nevada county where, fifteen years ago, there were clumps of the cornelian-hued wild Lilies growing beside the mountain trails and by the springs in the cañons. To-day, in the same districts, it would puzzle one to find a single Lily, though they used to grow so tall that a man on horseback could ride beside them and find the flowers waving as high as his head.

Notwithstanding the mountain fires and the sheep, the finer portions of the great coast range and Sierra forests, as yet hardly touched by the lumberman, remain the same magnificent wildernesses that they were when the first American pioneers drove their wagons across the plains and up the mountains, past their crests into the land of giant Pines and Cedars. Virgin solitudes still remain as unchanged, to all appearance, as the heart of the Himalayas. Mountain rivers break over precipices, ice cold springs flow from under the superb trees, there is game everywhere, and for weeks a party of campers hardly see a strange face. These are the places where national and state reserves of timber lands should be established, and that as soon as possible. Every year of delay lessens the opportunity. There has been talk of withdrawing large tracts of government land around Mount Shasta from sale so as to secure a grand State Park in the midst of the finest forests on the Pacific coast. This plan deserves the support of the whole country, no less than the preservation of the Adirondack forests.

CHARLES HOWARD SHINN.

A BEGINNER IN FRUIT-GROWING.

NUMBER 8.

I had supposed that with the planting of the fruit trees and plants and the nurse crop for the same, my work would naturally end, and I would let those who had patiently read my letters go on and take care of their experimental plantation after plans of their own or the usages of their neighbors, but a practical friend, who is a careful reader of a great deal of horticultural literature, tells me that it is hardly fair to leave a beginner at the point where so many commence to fail. He says that when the planting is done the battle is only begun; that vigorous plants and trees have considerable vitality and will often live even if not scientifically planted, but will not make a profitable growth and final success if neglected afterward, and he urges me to return to the subject and advise the careful cultivation and watchfulness which alone can bring the largest profit in fruit culture. There is force in these suggestions, and if my readers are not already tired, and the editor so wills, I will offer some suggestions born of experience.

A very large class of beginners must make their living while waiting for the fruit to grow, and a majority of these are the owners of only a small piece of land. Some are mechanics who continue to work at their trades, while their older children attend to the fruit garden; others are laborers who work around the neighborhood, and still others are small farmers who dare not and cannot loosen their grip on agriculture until horticulture gives something more than a promise to pay their taxes and clothe their families.

Their different, but necessary, occupations, coupled with another reason, often lead to the neglect of the newly planted fruit crop, and weeds, and failure, and sorrow, and poverty result instead of luscious berries and fruit-laden boughs. The other reason referred to does not obtrude itself, but is, nevertheless, a powerful factor in the problem, especially where the fruit-grower is or has been a farmer or farm laborer.

Farming has its periods of seeding, of hoeing and cultivation, of laying by, and of gathering in the harvest, with certain intervals of growing between, when the

farmer expects the crop to "shirk for itself." He sows a distant field, and if it comes up nicely, well and good; if not he cannot very well help himself, and harvests what grows. If he plants hoed crops, like corn or tobacco, he generally expects to replant missing hills, but does not give that critical attention to each hill that the fruit-grower should to each tree and plant, and after planting he waits two or three weeks, going a fishing in the meantime. When he turns fruit-grower he finds it difficult to realize that there is no waiting period, or that a berry plant needs more attention than a hill of beans, or a young orchard more looking after than a crop of oats.

Some hints on these differences have been dropped before, but the fruit-grower cannot be too strongly impressed with the importance of starting with full rows, and a daily supervision of the plantation. Especially is this true where hired laborers or children are employed. For many years I have been in the habit of inspecting, in the early morning, the work of the day before, and have often, by correcting mistakes in season, made the sunrise hour the most profitable one of the twenty-four. Even with experienced help it will pay to observe closely how the work is done. One spring, I set an experienced man to planting two thousand Raspberry tips. All had made some growth, and where this growth was more than an inch long the planting was all right, but those of less height he had planted wholly beneath the ground, notwithstanding it was a foliage growth that would have been smothered, and only my watchfulness saved three hundred and fifty out of the two thousand, by having them replanted. All fruit plants show at once above ground, and this enables the grower to start the hoe and cultivator at once, and there is often great need of it, as the planting is done in early moist weather, and the earth becomes hard from tramping and rains, and if plowed early the hardier weeds will have made a start.

Vacancies in all small-fruit plantations should be filled as fast as discovered. If the owner is the possessor of a plantation of the previous year this is compara-

tively easy, as plants can be carefully transplanted therefrom, but if the plants are purchased the only way is to fill up with plants already set, taking from the ends of rows of the same variety. Plants after being set two or more weeks will have an abundance of tiny rootlets, which if they do not carry with them considerable earth, will at once accommodate themselves to the new situation and grow with little loss of time. It is much better to have the waste ground at the end of the rows than scattered through the piece, and the end plants are less profitable than those farther in the rows, owing to the tramping of horses, men and pickers. Five per cent. is about as little loss as a beginner can expect in setting small fruits, and this means one rod in every row of twenty rods, and by carefully removing the end plants into the vacant places the waste ground can be utilized by planting Potatoes, and there are no waste places to cultivate, and hoe, and skip over in picking.

As soon as the ground begins to dry out, in May, and assume its natural color, the poorer places can be seen and then is a good time to apply on the surface such manure as can be obtained. If one lives near a town it is easy to obtain manure cheap, as health officers constantly watch the stables, and insist on the removal of manure every few days. Market gardeners are busy with growing crops, and so it often happens that manure can be had for the drawing. Applied on the surface of poor places in a reasonably fine condition it will work into the soil during the summer cultivation, and equalize or average up the land nicely.

In caring for and manuring fruit plantations the first year the owner should always keep in mind the fact that the life

of a fruit plantation is not like that of a crop of oats or beans, for one hundred days, but for years, and the apparent expensiveness of the first year's care divided among the succeeding years averages down considerably. However, whatever may be the apparent cost of the first year's cultivation, nothing but thoroughness will pay, especially with strawberries. This is the rock on which so many farmers wreck their hopes of eating strawberries. They neglect them during July, in the press of haying and harvest, and the weeds and runners do an injury that no after cultivation can make up for. I have now a strawberry patch that is a good object lesson on this point. Last year June was a very wet month and nearly all work in hoed crops was necessarily delayed until after July 3d. Hoeing, haying and harvesting all came together and help was scarce and high. I had a young man hired by the month for the summer, but he was offered \$1.50 per day, and he left me unceremoniously, and with a raspberry crop that took nearly the whole of my available help, I was compelled to neglect the strawberries and hoe them at odd times. At this writing, May 1st, the patch is a good diary of the time of hoeing. Those hoed early in July look fairly well, while a few rows, neglected until August 1st, will not be worth picking.

An acquaintance, who works in a reaper factory, where work stops July 1st, has for many years tried to grow small fruits to give himself employment during the three months' vacation. He has been moderately successful with raspberries, but the strawberries, tended by boys in their early stages, have always, except in the most favorable years, been partial failures.

L. B. PIERCE, *Summit Co., Ohio.*

ARNOLD ARBORETUM.

This is always an interesting and instructive place to visit; go when you will, at any time, and there is something you can learn and very much to see. In our report for the year 1885 your attention was called to the arboretum. Since that time many changes have been made, also many new and rare trees and shrubs have been added to the large and choice collection.

There probably is no place on this continent where so much valuable information in regard to trees and shrubs can be obtained as here. The opportunity for information and instruction is unsurpassed, especially if you meet our friend DAWSON, and are fortunate enough to get him to accompany you. In a recent visit we were charmed with a delightful bed of

composite plants which were in the height of beauty, when the summer-flowering plants were all done. At our request Mr. DAWSON has furnished a statement of this bed, which I am sure will be read with interest and profit. Mr. DAWSON writes:

"At the arboretum is a bed of Compositæ, containing some seventy-nine species and varieties of Aster, Solidago, Helianthus, Rudbeckia, Pyrethrum, Sylphium, Echinacea, and others. The massing together of these species of plants makes a display at a time of the year when most other bedding is on the wane, and which continues well into the fall, after the more tender plants have been destroyed with frost. This kind of bedding should receive more attention, especially on large estates where many nooks and corners, often unsightly, could be made a thing of beauty. In many instances people of wealth go to the seaside or other summer resorts as soon as the spring flowers are over, and do not return until September or later, when the beauty of the garden is past. Now by a judicious planting of these late autumn-flowering Compositæ, the autumn garden would be as brilliant, if not more so, as the spring garden, so that by a judicious arrangement of all the spring and autumn blooming plants each end of the season could vie with the other, and the place would not have the deserted appearance that many gardens do after the first frosts. The cultivation of this class of plants is simple, the main requisite being a good, deep, well prepared soil, clean culture, and the taller species secured by stout stakes to keep them from being broken by the fall gales, and the taking up and dividing and resetting of the plants every two or three

years. In fact this is necessary with the most of herbaceous plants when fine bloom is wanted; where they remain long they are apt to crowd each other, and the flowers are smaller and do not last as well as when the beds are made over, and the plants divided and reset every two or three years.

"The following are a few of the varieties in the bed spoken of: *Helianthus rigidus*, *H. grosse-serratus*, *H. doronicoides*, *H. tuberosus*, *H. mollis*, *H. Maximiliana*, *H. strumosus*, *H. decapetalus*, *Actinomeris squarrosa*, *Boltonia glastifolia*, *B. asteroïdes*, *Pyrethrum uliginosum*, *Sylphium perfoliatum*, *S. laciniatum*, *S. trifoliatum*, *S. terebinthinaceum*, *Rudbeckia subtomentosa*, *R. maxima*, *R. laciniata*, *R. grandiflora*, *Coreopsis delphinifolia*, *Achillea Ptarmica*, *Heliopsis lævis*, *Aster multiflorus*, *A. Drummondii*, *A. versicolor*, *A. sagittæfolius*, *A. macrophyllus*, *A. umbellatus*, *A. prenanthoides*, *A. æstivus*, *A. lævigatus*, *A. simplex*, *A. spectabilis*, *A. sibiricus*, *A. turbinnellus*, *A. Shortii*, *A. amethystina*, *A. adulterinus*, *A. diffusus*, *A. puniceus*, *A. tartaricus*, *A. Tradescanti*, *A. Herveyi*, *A. oblongifolius*, *A. Lindleyanus*, *Solidago lanceolata*, *S. arguta*, *S. rugosa*, *S. squarrosa*, *S. canadensis*, *S. ulmifolia*, *S. sempervirens*, *S. Shortii*, *S. serotina*, *S. Riddellii*, *S. latifolia*.

"The *Helianthus*, *Sylphium*, *Rudbeckia* and *Boltonia* being chiefly tall growing plants are placed in the background, and the others as regards to their height in the front. This bed has been the admiration of all who have seen it, and the coming season will probably see more of this kind of bedding, which should be encouraged wherever a suitable place can be found for them."

J. G. BARKER.

BOUQUET MAKING.

To paraphrase an old couplet, there are

Many flowers of many kinds,
Many women of many minds ;

consequently, bouquet making may be a much diversified art. It is a pleasant pastime, too, for much of the pleasure of cultivating flowers lies in having plenty of them for home decoration, for your friends, and more especially for the sick. No home, however elegantly furnished,

is home-like or complete without floral adornment, and if there are not plenty of blossoms at one's command, an abundance of ferns with just a few flowers fill the vases nicely, while the fields alone furnish a wealth of material.

The most graceful bouquets have the least method in their arrangement; a few sprays of bloom put in carelessly often are the most artistic in effect. A bunch

of misty gypsophilla with a half dozen or more coreopsis blossoms placed in a dark brown vase and set before a mirror was a combination which demonstrated this. Few large flowers are capable of more arrangement than the pæony. The old-time rich, red variety forms a gorgeous bunch by itself, or is equally beautiful lightened with sprays of white; while carelessly placed in a gilded basket, with its own bronzy-green foliage it is most effective. The lovely and fragrant Chinese varieties, with their delicate shadings and exquisite tints, when massed on a platter and bordered with ferns are almost as handsome as roses, and make a pretty and lasting table decoration. There is an early single pæony, between magenta and rose in color and with a deep golden heart—it is cotemporary with the first sturdy growths of the ribbon grass, and combines with it admirably, although by tradition lemon lilies and ribbon grass are affinities. An old ginger jar of just the right shade of blue, filled with a large bunch of these richly odorous lilies, their exquisite yellow relieved by the creamy white and delicate green of the grass may quite content the artistic country maiden who has no royal Worcester and orchids at her command.

Then there is the "wild bouquet," from the moment when the first claytonia shyly looks up in its pink and white beauty to the coming of the gorgeous cardinal flower, and the grand finale of the golden-rod, some certain vase or stand should be sacred to these lovely freewill offerings of nature. Daisies and grasses form vase fillings of exquisite grace and lightness. Arrangements of clover, buttercups and June grass bring much of the meadow sweetness into the house, but in early spring nothing exceeds the beauty and daintiness of a little cluster of sweet white violets and the lovely tiarella.

A single perfect rose in a choice vase is a thing of beauty, yet nothing in the whole of floral decoration is quite equal to a bowl of roses, fresh and dewy and carelessly arranged with their own foliage. An antique bowl of blue sprigged gray and white ware, filled with old-time damask roses is as good as a history. What memories of the past does it not recall. The sturdy bush still stands

by the garden walk, but where are the forms that bent over its blushing beauty in those lovely Junes of long ago—as well ask "*Ou sont neiges d'antan?*"

Let us sigh a little and turn to these gay modern favorites, phloxes—the scarlet grandiflora, especially, which combines so charmingly with the calendulas. Or, again, the pure white, which with yellow flowers has a beautiful effect and lights up a somber room like a ray of sunshine. Gaillardias with their rich shades of orange and dark velvety maroon put in some oddly shaped vase and set on a polished mahogany or cherry table, which will reflect their glowing colors, form a motive for an artist.

One naturally combines pansies and maidenhair ferns, putting them in a low, oval dish, or in some of the pretty swinging receptacles for flowers. And verbenas, relieved with rose geranium leaves, are also used to best advantage in some of the charming shallow, cut-glass dishes.

When the native clematis is forming its feathery seed-vessels, the soft gray-green may be used effectively with scarlet geraniums or with pink. With its aid a pretty table decoration can be made by taking two small oval platters and filling them with moss, which when thoroughly wet is closely filled with little branches of clematis. In the center and around the edge place the geranium blossoms. For the centerpiece of the table fill a tall glass *épergne* with sprays of gypsophilla and pink sweet peas picked with long stems; the base of the dish was covered with clematis, in which was placed pink double hollyhocks. The tall dish was placed in the center of the table and the oval ones at each end, making a decorative effect in grayish-green and pink which was much admired. If preferred, scarlet or yellow could be substituted for the pink.

Great bunches of cheerful daffodils with their lance-like, green leaves are one of spring's earliest offerings to the bouquet maker; then comes the fragrant hyacinth and brilliant tulips. Tulips and sprays of white lilac or of deutzia seem a natural combination. The common lilac in an old-time pitcher takes one's memory back to the high mantel in the old keeping-room, and if any one is fortunate enough to possess one of those ancient pitchers of a golden bronze

earthen ware, they have an ideal receptacle for branches of apple blossoms.

The perennial sunflower lends itself to decoration most effectively, and combined with plenty of dark green and placed in a large vase, brightens up some dark corner wonderfully. A unique and charming effect was produced by a slender, graceful vase set in front of a pier-glass and filled with the leaves of the lovely striped grass, *Eulalia zebrina*, and given a touch of color by a few velvety *salpiglossis* blossoms.

In arranging baskets of flowers for exhibition at fairs, it is advisable to first line the basket with coarse brown paper, then to fill with sphagnum; wet this thoroughly, and by tying short-stemmed flowers to little splints of wood any scheme of decoration can be carried out. Double geranium blossoms and buds

can be utilized in this manner and make a fine and pretty border for the basket with an edging of rose geranium leaves or of fine ferns. Shallow zinc-lined boxes filled with the sphagnum and a few bits of charcoal are excellent for holding displays of separate varieties, as of asters, verbenas, etc.

Certain flowers suit certain vases—a Wedgewood vase, for instance, is hard to fill suitably unless with white, or with purplish-blue sweet peas or asters. A slender, buff Satsuma vase seems expressly designed for the lovely scarlet Siberian lily, *Lilium tenuifolium*, and a dark, greenish-blue Limoges jar for holding a stalk or two of pink Japan lilies is a feast for the eyes; while a slender crystal vase with one white lily is the epitome of all that is beautiful in art and nature.

ADA MARIE PECK.

A JUNE MORNING.

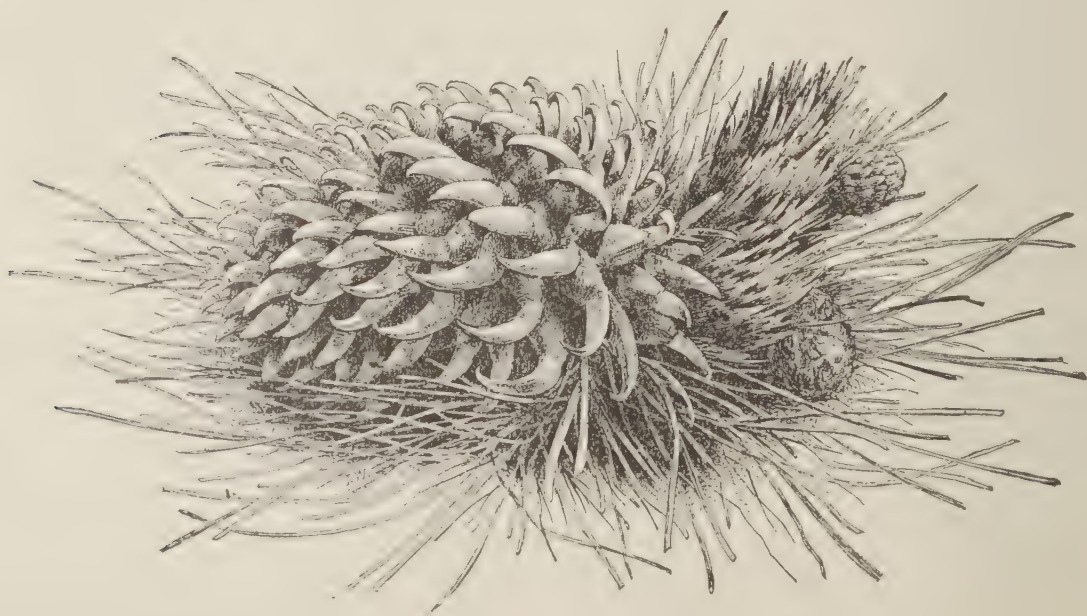
Hark to the basso of bumble-bees
Out in the new blown clover!
Bumble-bees, honey-bees in their flight,
Skimming the wide fields over,
Hiding in buttercup's golden heart,
Then in a bed of daisies,
Laden with gold-dust, full of sweets
Gathered in flowery mazes.

Hark to the concert! The merriest birds
Down in the orchard greenery,
Glad as ourselves, are welcoming back
June, with her gorgeous scenery.
Little ones peep over feather-lined walls,
Chirping a glad good morning,
Peering 'twixt trembling pearls, to see,
Pleased with the earth's adorning.

All of the flower waifs, great and small,
Straighten and grow in sunlight,
Roses are fragrant, and see, oh, see
Lilies with petals snow white.
Hundreds of tiny swelling buds,
Each of them with a mission,
Welcome the zephyrs and sunbeam's gold,
Making our earth elysian.

Nature is clad in her best array,
Taking her yearly outing;
Who could be sour or cross to-day?
Who could be sad and doubting?
Who could go scolding or fretting, sure?
Who could greet sharply a brother,
On such a beautiful day, when all
Out of doors smiles to each other.

MRS. M. J. SMITH



FOREIGN NOTES.

FLORAL PHOTOGRAPHY.

The representation of floral arrangements by means of photography has derived much benefit from the introduction of what are known as the isochromatic plates. As is well known, certain colors, yellow for instance, are represented by dark spots on the ordinary photographic picture, and in this way many delicate flowers having yellow in them, as have several Orchids and others, are falsely reproduced, and the balance of color completely thrown out. These vagaries of the camera are due to the varying chemical powers of the different colored rays of light. The isochromatic plates correct this to a certain extent, and so give a more truthful representation of the shades of the original. Visitors to the Crystal Palace Flower Show last Saturday might have seen a demonstration of these remarks at Messrs. EDWARDS' stand, where a graceful composition of Lily of the Valley, Daffodil and Hyacinth, in a vase, was shown photographed by both the methods referred to; in the case where an ordinary plate had been employed the Daffodils were represented by very dark shadows, but when the isochromatic plate had been used the Daffodil showed up as being slightly more shaded than the white Lily of the Valley. For landscapes in which there is much foliage these plates are also to be recommended.—*The Gardeners' Chronicle*.

FUNKIA GRANDIFLORA.

The bold, sub-cordate leaves and spikes of pure white fragrant flowers, thrown well above the rich green Eucharis-like foliage, entitles this Japanese liliaceous plant to be extensively grown in borders and pots. It is a good plant for standing in vases in rooms, entrance halls, and for decorative purposes generally. The plant will reward generous treatment, and plants potted up now in sandy loam and leaf mold, or as soon as they have made a little growth, in 4½-inch and 6-inch pots, and stood on a bed of coal-ashes, in a low pit or frame, and kept close for a few days, make nice flowering plants by

autumn. The Funkia, of which there are several varieties, loses its leaves in winter, during which period the pots may be stood in a cool-house or pit, or plunged to the rims in coal-ashes, out of doors, where water is not likely to lodge.—H. W. WARD, in *The Gardeners' Chronicle*.

VARIATION IN PLANTS.

MM. ETTINGHAUSEN and KRAZAN have observed that after a severe frost, which did much injury to certain Oaks and Beeches, leaves were put forth in the following spring—unlike the ordinary leaves, but recalling those of some of the American species, and even some species now only known in a fossil state. The authors are of opinion that the species now only known in a fossil state did not disappear suddenly by the extinction of individuals, but by successive change of characters, according to circumstances, so that they acquired ultimately an appearance quite different from that which they had at first. Similar changes in the leaves of the same tree have been observed as a result of the attacks of insects. Hence existing species are the result of transformations effected in the parent stock. In connection with this circumstance, we may recall a similar illustration in the case of the Japanese Maple at Mr. JOHN WATERER'S nursery, one side of which was injured by salt winds, and which has ever since produced leaves and flowers of a different character to those on the opposite side of the tree.—*The Gardeners' Chronicle*.

LETTUCE SEED IN INDIA.

Gardening in the plains of India labors under this difficulty: Vegetable seeds have to be imported either from Europe or America, because plants grown from Indian seed have a tendency to run to flower readily, and this tendency increases with every successive generation of Indian-grown seeds. Cos Lettuce, for instance, the first year gives very fine heads, but seeds kept from them next year produce plants that "bolt" before the head of the Lettuce is formed.

The following experiment succeeded admirably: The head of Cos Lettuce from imported seed was cut off close to the ground and eaten; only a few leaves were left on the stump. Side shoots from the axils of the remaining leaves soon appeared, and eventually ran up and flowered, and seeded. The seeds of these next year gave as good results as could be wished. So that by selecting plants that were well cabbaged at the top every year, and keeping seeds from their side shoots alone, a very satisfactory strain of Lettuce seed resulted. The heads required no tying, for the tops of the leaves overlapped each other, cabbage fashion, so that the inner ones were blanched, sweet and crisp. I found that Lettuce wanted rich loose soil, and plenty of watering. European vegetables can only be successfully grown in winter in northern India, owing to the dry heat or damp heat in other parts of the year.

Recently a great deal has been written by WEISSMANN and others on heredity. He holds that no acquired character is transmissible, and that only such characters as are congenital can be inherited by future generations. It appears that this Cos Lettuce is a fair example of an acquired peculiarity becoming transmitted to its future generations. The imported seed from either congenital or acquired habits in Europe gives a slow-growing head the first year. But the influence of its surroundings in India is too much for it. They impress upon its nature a different character, which, in the second generation, produces a quick-growing head, and goes readily to seed without giving time for the inner leaves of the head to blanch. This latter character, acquired from its climatic surroundings, accumulates every successive generation, until the seed becomes useless for salad purposes. Now by cutting off the main stem and allowing the side shoots to grow and seed, the original character of a slow-growing head is maintained in spite of the climatic surroundings.—E. B., in *The Gardeners' Chronicle*.

MIGNONETTE IN WINTER.

I noticed recently some fine specimen plants of Mignonette in the gardens of E. R. TROTMAN, Esq., The Elms, Prome. The seeds, I am told, were sown several

in a 48-sized pot; and the seedlings were reduced to four in each pot when sufficiently advanced in growth. From these pots they were removed into others 10 inches in diameter, which seems rather a large shift, but their present condition speaks volumes in favor of the liberal treatment. They are two feet high and proportionately bushy, and crowned with vigorous flower spikes in goodly numbers. The soil used consisted of loam three parts to one each of spent Mushroom bed, leaf mold and sand. In potting the soil was pressed down firmly, which induced a sturdy growth, and until recently no stimulant was applied of any kind. They occupied a position in the front of a large and lofty vinery having deep front lights, and only a frost-proof temperature was maintained.—W. S., in *Journal of Horticulture and Cottage Gardener*.

DAFFODILS.

Since the times of the old herbalists, or for something like 300 years, Daffodils have been favorites amongst hardy flowers, and for a good portion of that time some of the chief types have been represented in our border plants. The fact that so many produce their flowers with the earliest harbingers of spring would alone have sufficed to insure them prominent attention. But in addition to that, their flowers, even of the oldest varieties, are distinguished by considerable beauty of form, and to this is added, in numerous instances, a delightful fragrance refreshing and never overpowering.

The strong points in favor of Daffodil flowers is that they last well when cut. With ordinary care in packing they travel safely, and they are in nearly every case exceptionally well adapted for arranging in vases or bouquets, or for other floral decorations. Some, like the simple and double forms of the Poet's Narciss, are unrivalled amongst outdoor flowers for all purposes, even for button-holes, sprays and wreaths. Still another point is that some members of the family can now be had for fully half the year—namely, from December to the end of May. Many are adapted for culture in pots, are forced early with little trouble, and then, last of all, they are cheap. There is, in consequence, no mystery about the popularity of the plants.—L. C., in *Journal of Horticulture and Cottage Gardener*.

PLEASANT GOSSIP.

GO, GATHER THE FLOWERS.

Gather Roses and Daffodils, bright-hued and gay,
Meet flowers for the dear little prattler, to-day;
She will crush the rich blossoms, dew-dipped in the
morn;
Ah! 'tis early to learn that each Rose has its thorn.

Pluck Violets blue, sweet flowers of the May,
For the child is a rosy-cheeked maiden, to-day,
And she's winsome, and merry, and gracious, and
sweet
As the shy little flowers that bloom at her feet.

Weave the sweet Orange blossoms a long, graceful
spray,
For the child and the maid is the bride of to-day;
Bind the full flowing veil while their rare fragrance
swells
And floats on the breeze with the glad wedding bells.

Gather Trailing Arbutus, a charming nosegay,
For the bride is a happy young mother, to-day;
From the depths of the forest the fresh blossoms
bring
Sweet visions of new life of summer and spring.

Go, gather the Pansies, a basketful, pray,
Heartsease for the world-weary woman, to-day;
Like bright little faces the blossoms appear,
Each bringing a message of love and good cheer.

Gather Lilies, the pure white Lilies, to lay
On the low, grassy mound where she's sleeping to-
day;
For the beautiful blossoms seem breathing of peace
In some calm, sheltered harbor, where joys never
cease.

J. F. H.

LOCAL BOTANIES.

I hold in my hand a work of 498 pages,
entitled, "*Flora Cestrice*," or, in full,

FLORA CESTRICA:
AN
HERBORIZING COMPANION
FOR THE
Young Botanists of Chester County,
State of Pennsylvania.

By WILLIAM DARLINGTON, M. D., LL.D., etc.

Third Edition.
PHILADELPHIA.
1853.

This book is said to be the completest local botany in existence. At least, this is the firm belief of all the botanists of the region which it describes. The author, Dr. DARLINGTON, was a physician, and later in life a bank president, but all his leisure was devoted to the pursuit of his beloved science. He spent much

time in the numerous private schools in his neighborhood, giving gratuitous instruction to the pupils in botany, in this respect resembling the lovable Dr. J. D. HOOKER, of New Haven, who has given us his delightful natural histories. Dr. DARLINGTON'S labors of love were rewarded by the large number of earnest young botanists he had the pleasure of seeing in every portion of his native county, and it is doubtful if any other rural county in the country has so many botanists as Chester County, Pennsylvania.

The frontispiece of the *Flora Cestrice* is a most excellent geological map of the county, in colors. The advertisement states that it was the original intention to catalogue and describe every plant in the county, but finally it was decided to include only the flowering plants, the Ferns, Equisetaceæ, Mosses, Hepaticæ and Lichens, and these we find in the book.

The book contains an exhaustive glossary of terms, and five delightful talks to the Dr.'s young friends, which take the place of the ordinary "lessons" in botany. The orders and genera are arranged under the system of LINNÆUS, as also under the natural system of DE CANDOLLE.

It will be noticed that the book passed into its third edition. This is mentioned as an encouragement to any one who may have a desire to enter upon a similar enterprise. Dr. DARLINGTON was also the author of *Weeds of American Agriculture*, and he edited *The Letters of BARTRAM and MARSHALL*, two early botanists of Pennsylvania. He also wrote the life of Dr. WILLIAM BALDWIN, a botanist of his native county. In his writings he had something of the felicity of the late Dr. ASA GRAY. He was known, long before his death, in every portion of the civilized world, and the proceedings of learned societies came to the post office of his native town for years after his death. An English botanist having visited him at his home, made this note on West Chester: "It is the

home of Dr. DARLINGTON." His herbarium, in excellent condition, is now in the possession of the West Chester (Pennsylvania) State Normal School.

His last discourse closes with these words: "And now—having reached the allotted limit of three score and ten—the author would take an affectionate leave of his young friends, under the impression that the present will most likely be his last attempt, in this way, to promote among them an acquaintance with the vegetation of his native county. He has devoted the leisure of a number of years to the favorite employment of endeavoring to excite a taste for the study of plants, and to aid the researches of his juvenile cotemporaries in that charming department of natural science. His efforts have been amply repaid by the gratification attending the communion of kindred spirits, and such is his delight in the pursuit that sometimes, in his dreamy reveries, he indulges the flattering idea that if, peradventure, his work should survive him, he may continue to be an humble auxilliary of our youthful botanists, and, in some sort, a companion of their studies, even when the flowers of Chester shall be blooming on his grave."

G. G. GROFF, *Bucknell University.*

A STORY ABOUT MR. VICK.

It was years ago. I had never seen Mr. VICK—in fact, I never did see him, except in photographs—but for three or four years I had sent to him for seeds and bulbs, and we had had some pleasant correspondence over the same. I have some of those early catalogues still, and never can bear to burn them up, for the sweet hours of cogitation they cost me. Very different things those old issues were from the showy things of to-day, and I think they were better, for they held just enough. The catalogues now hold too much, unless you are Cræsus. And if you are Cræsus, it is only your head professional who handles the catalogues. At least, that seems to be the way with most of the cloth-of-gold families, though it never could have been with me.

Well, it was one year, in early fall, or rather, late summer, just when the last days of August were slipping away, that I wrote to Mr. VICK for bulbs. A very small order, perhaps to the amount of

one dollar, or one and a half, for I was never kith or kin to Cræsus, and so, of course, it was for only the simpler bulbs. I remember the names of but two, and those only because they afterward gave birth to a little book—"Blue Flag" tulip and "Cloth of Gold" crocus. I always set great store by the names of my flowers, as one does to whom the flowers themselves are personal friends.

The bulbs were ordered for a birthday. We were away from home at that time, staying with a dear friend up the river. She had innocently told, one day, that her birthday had never been kept, musing over the long procession of years which had given—unknown to her—their sweetening touches to her face, and she never marked the glances that met across the table, nor guessed that we laid a plot.

There were some half dozen of us younger people in the house, and we held a private meeting about gifts and arrangements. One sent for this, and another for that; but the dear lady and I had so often talked flowers and catalogues together, that flowers were my natural choice. The birthday fell on the eighth of September.

The days between fled very fast, and the other love tokens began to come in, but no sign of my bulbs. It came to be the seventh of September, and there was neither letter nor box. Late in the afternoon one of the conspirators went to the village for some part of his "tokens," and returning at nightfall, in the pouring rain, sent for me. Alas, how well I can see it all now.

Out there, in some side corner, stood my friend, with dripping great coat and umbrella, flashing the dim light of a lantern over two long baskets of flowers, as dripping as he himself. "If these are not the things," he said, "there has nothing come. Stop, here's a letter." But holding the letter in my hand, I gazed first at the baskets. Packed absolutely full, running over, with blooms and fragrance. The shimmer of light and rain was on leaves that I knew and leaves that I did not know—an exquisite mass of freshness and beauty.

Yet I stood disappointed. These were not my bulbs. And such an array. Had Mr. VICK surmised that I was Cræsus, after all, and sent plants to match? And

these were cut flowers. The dear lady could not tend these and watch them grow. I think it was a drawn fight between chagrin and perplexity, as I tore open my letter and held it down to the light.

It is not at hand here, that old letter, though I think I have it laid away at home; but this was the substance. It was too early yet to fill orders for bulbs, so Mr. VICK wrote: The consignments from Europe were not in, and these flowers were sent as a substitute, and Mr. VICK hoped they would reach me in time for the birthday. The bulbs would follow in due season.

O, what a frolic followed then. To get the baskets safe upstairs, unseen; to order up all the bowls, pans, dishes and basins where the flowers might rest and refresh themselves for the night, and then the unpacking. I have seen a good many fair and lovely baskets of flowers since then, but never any that were just like those two, for the flowers were in masses. A sheaf of Japanese maize, the stalks two or three feet long; a bundle of gladiolus stalks that matched the maize; sweet peas bunched in great handfuls, each color by itself; great branches of rose geraniums, with roses, violets, phlox and all the rest of summer's treasures. It was a late getting to bed we had that night.

And early, early next morning we were astir, demanding handsome dishes this time, and keeping the old housekeeper on the run. Housekeeper she was not, in strictness, but for fault of a better that name may do. How we worked. Breakfast was always betimes in that blessed house, and the decoration of the breakfast room went on at full speed. And it took everything there was to hold those flowers. Many a dainty bit of glass and crockery, held quite too good for common occasions, came into use that day, though sometimes not until after an appeal to the dear lady up stairs, who very much wondered what we could be at. But I think the variety and irregularity of dishes heightened the effect. I remember how hard it was to find the right thing for the tall plumes of maize and gladiolus; how we filled whole bowls with sweet peas, in true spendthrift fashion; how roses were crowded in on the breakfast table, where they would

look full in the dear face that was, in some ways, as sweet as their own; how we went round and round, after the work was done, never able to admire enough. Then, how all the conspirators stood by, with innocent looks, as the mistress of the house came in, and wished her good morning as sedately as if there had not been a flower in the world. Ah, me, those summer mornings of long ago, how sweet you were!

I can see her now, as she went about the room, with ever growing wonder and delight, the small hands shading her eyes, or holding each other fast, and she asking all sorts of questions, which at first we would not tell.

We had arranged to give her only the flowers for breakfast, letting the rest of the gifts, with a note from my belated bulbs, wait until mid-day, and it was well we did. Too great a weight of pleasure turns well nigh into a pain. The dear old lady was above eighty then; but as the day went on, her soft cheeks gathered and kept a bloom of their own that would have done credit to sixteen. It matched the roses.

The flowers lasted wonderfully, they had been cut in such young perfection, with such care. For days they were a constant talk and pleasure—yes, for many a day after they had faded and fallen, the vision of their glory, the fragrance of the kindness that sent them, lingering on and remembered to this day, but now by just a few. For the old house stands empty, and of all who saw that fair display, not more than two or three are left. They have faded and fallen, like the flowers. I said, alas, and yet that is not the word, for of them all, from the generous sender of the flowers to the old retainer, who sought out the dishes, not one but has passed away in sure hope of eternal life; not one but is standing now

“Where everlasting spring abides,
And never withering flowers,”

where “the winter is past, the rain is over and gone, the time of the singing of birds is come.” O, why should I say, Ah, me? “The world passeth away, and the lust thereof; but he that doeth the will of God abideth forever.”

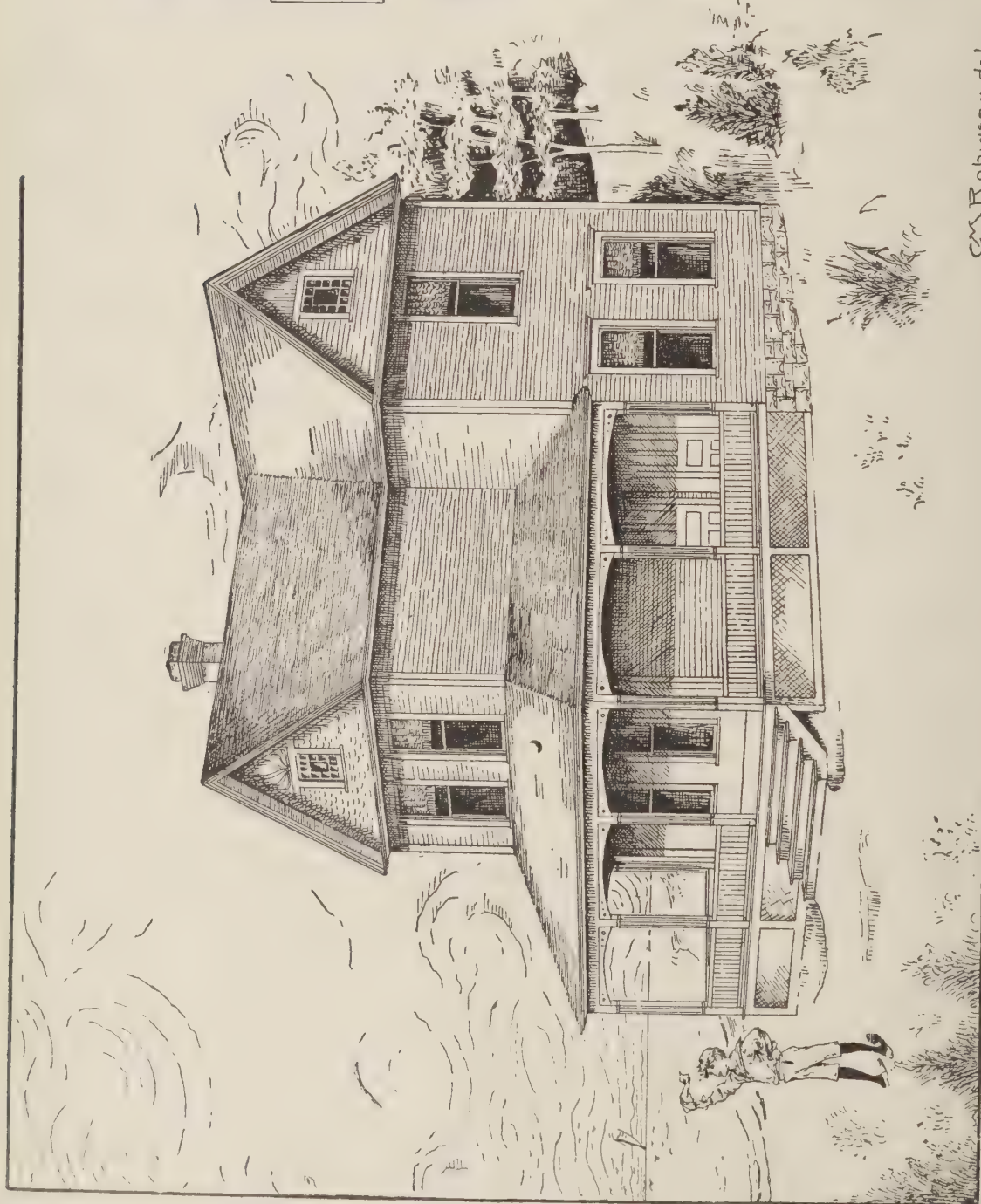
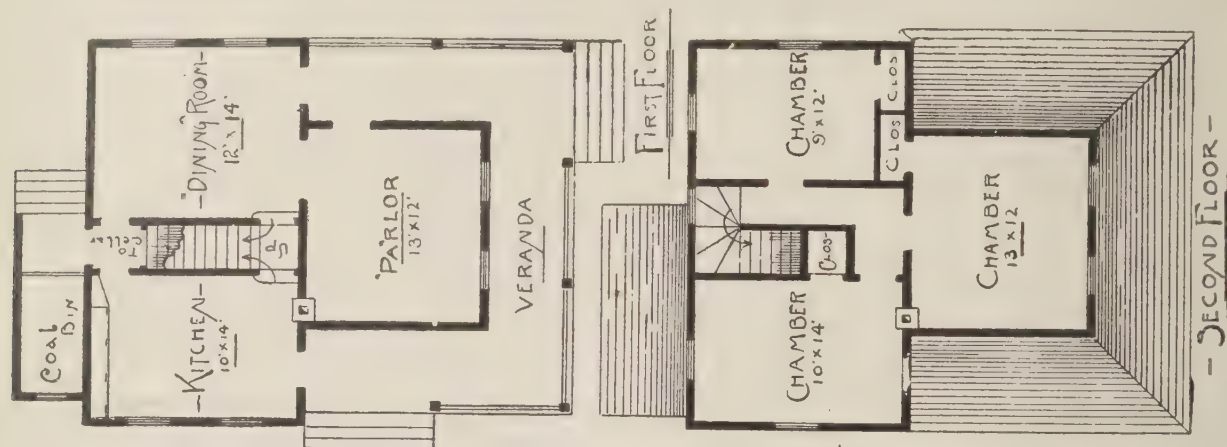
I should have told you that both those great baskets came from Rochester express paid. That was just like Mr. VICK.

ANNA B. WARNER.

A SUMMER COTTAGE.

Where to spend the summer is a question now agitating the minds of a great

illustrated, with its wide veranda and convenient rooms, is noticeable in town as well as at the resort, and to all lovers



many people. There is no place so pleasant as some picturesque cottage in the mountains or at the seaside. The attractiveness of the little cottage here

of out door lounging it will be a favorite design. The rooms are of good size and not cut into odd shapes. Closets are plentiful, and the stairway is arranged to

go up out of both dining-room and kitchen, and by making a door from parlor would accommodate that room also. There is a cupboard in the kitchen and a coal bin in rear. A room to be used as kitchen could easily be added to the rear, and the present kitchen used as a chamber or sitting-room, if desired. Height of stories, 9 feet and 8 feet 6 inches. Front gable shingled and the rest of house weather-boarded. It would cost about \$779 set on posts with no cellar, and finished as a summer cottage. For any information or plans address the architects,

SMITH & ROBINSON, *Altoona, Pa.*

GOODY TWO SHOES.

She is not, as you will see by the sketch, the historic' fairy, or witch, who gave such marvelous good gifts, but a tasteful receptacle for flowers. As I wan-

corner, I seized my pencil and sketched the Goody Two Shoes vase, as you see, with Lilies of the Valley, and learned from the shop-keeper that the little china shoes were the fad of the season.

Calling upon friends, little blue shoe flower roses meet me in the hall, side by side with the silver or golden salver containing cards with names of visitors, none more welcome, I am sure, than the unostentatious Lilies of the Valley, always clothed in spiritual thought.

ADA LOFTUS, *Paris, France.*

STEPHANOTIS IN JAMAICA.

Mrs. J. V. R., of Columbus, Georgia, in the April number asks for a description of the Stephanotis, so I will endeavor to describe some few dozen plants which are growing in a large garden under my care. They are vigorous climbers, growing to the tops of the largest and loftiest



dered up and down the Rue de la Paix, St. Valentines' Day, February 14th, wondering what I should purchase to send across the sea, in the way of gilded card with poetic wishes well versed, I turned to an inscription, "Floral Valentines," and while pondering upon the utility of a gift and pleasure it would impart as long as the plants exposed in pots, tied up with Turkish Oriental schen stuff in scarf shape, with 1890 embroidered in a

trees, and require but little care and attention. The plants are now in full bloom, long, heavy festoons of the purest white are hanging and drooping from the branches, and suspended from tree to tree, while here and there are seen masses of bloom among the dark foliage, making a sight not easily forgotten. The flower, in color, shape and fragrance much resembles the single tuberoses, and, like the Bignonia radicans, it blooms in

clusters of five or six blossoms from the axils of the leaves, which are stout, oval, and of a dark, glossy green. The seed-pods are quite a curiosity, when seen hanging from the trees they may readily be mistaken for white spine cucumbers. As the pods ripen they open on one side and disclose what, at first sight, one would imagine to be an ugly, brown scaly caterpillar of about four inches in length; each seed representing a scale has a crown of fine, silky pappus, like thistle down, which opens to the breeze and carries the heavy seeds to very considerable distances.

W. S., *Kingston, Jamaica.*

COPPER SOLUTIONS FOR VINES.

I have no doubt but there is considerable truth in what you say about the sulphate of copper tainting the grapes. Your formula for bordeaux mixture I like better than any seen yet. The slacking of the lime and then allowing the clear lime water to come to the top, where it can be drawn off by a hose syphon, I think is better than mixing the thick lime water with that containing the sulphate of copper. I have no doubt but the clear lime water will have the same effect on the grapes as the thick lime mush. The latter is very difficult to get through a spraying pump, and gives the leaves a curious whitewashed appearance.

Concerning the bordeaux mixture, there is no doubt of its stopping the ravages of rot and mildew, if applied early enough and used judiciously as the grapes mature. I see that the government of Switzerland has made it compulsory to use the bordeaux mixture, and neglect is punished by fines.

W. B. WRIGHT, *Palestine, Texas.*

DAY LILY IN MINNESOTA.

Your advice to J. M., Elmore Minnesota, about the day lily, is all right for New England and New York, as I know, but after experimenting with it for years in Minnesota, I feel moved to say to J. M. that best results are obtained by keeping the white day lily in a good sized box or tub the year round, and remove to cellar during winter, for this reason, our seasons are not long enough to give the lily a long season of bloom, so that, while it stands the winters well if planted out

and left, and grows well during the summer, it only gets into good blooming condition when our frosts come, and then, alas, your thing of beauty is a joy no longer; whereas, if planted in rich soil in a box or tub holding half a bushel of earth, and kept well watered during summer after wintering in the cellar, and brought into the kitchen or any place where it will not freeze, early in spring, and set out of doors the middle of May, it will begin to bloom in August and continue many weeks in bloom. Don't change it until the box is crowded full of roots. Mine is in a large butter firkin, painted, and iron handles at the sides for lifting, and has not been changed for three years, I think, but I am sure it could not do better then it has under any treatment. Water once a week during summer, with liquid fertilizer made by pouring water on droppings from hen house and letting it stand a day.

MIRIAM PARKER.

CROSS-FERTILIZING CORN.

Whether corn that has been cross-fertilized will show the effects of the cross the first season is a question that has now received testimony in our pages on opposite sides by different parties, their statements appearing in the March and May numbers. Both of these writers, Mr. MOORE and P. W. A., of course, agree that the effects of the cross is apparent the second year. Now, to reconcile these statements, both of which are undoubtedly substantial, comes the report of the botanist, WM. A. KELLERMAN, of the State Agricultural College at Manhattan, Kansas, of an experiment in cross-fertilizing corn in 1888. Last year, 1889, the grains were planted from twenty-three of the ears thus obtained, and all "produced ears which, without exception, showed the effect of the crossing." Thus having proof that the crosses were actually effected let us look back to the first year and see what the record shows. In the words of the report: "According to the record of these crosses fourteen of them showed no effects of the cross the first year, three exhibited unmistakable evidence, and six of them were doubtful; that is, the effects were not clear enough to be recorded as indisputable."

It is a pleasure to be able to bring forward such evidence at this time, and

henceforth it may be considered as finally settled that cross-fertilized corn may or may not show in the grains the effect of the cross the first year. This conclusion is an important one from a practical point of view, and seedsmen and planters will observe that they cannot judge of the purity of any strain of corn merely by its appearance.

NICOTIANA.

How many of the readers of this MAGAZINE know about this plant? There are, I know many beautiful and wonderful plants growing, and we cannot all have everything we see advertised, or that our eyes may chance to see; but here is a plant that it does not cost a small fortune to possess, here is a plant that anybody can raise, here is a plant that is admired by every one. It is not a tobacco plant, although it belongs to the same genus. This plant is *Nicotiana affinis*; it is a rank grower, it does not require any care.

Last summer, from a package of seed costing ten cents, I had in a bed in one of the borders on the lawn, fifteen of these wonderful plants. The seed was sown about May 20th. The plants soon made their appearance, and by the first of July they were four and a half feet high. Visitors said, as they looked at them, "What, have you gone into the tobacco business?" But little did they know what this plant would soon bring forth. By the fifteenth of July we could count one hundred and fifty blossoms on every plant. The flower is large, star-shaped, pure white, and, oh, how fragrant. The bed in which I sowed the seed was two hundred feet from the roadway, and from this roadway you could detect the fragrance from the flowers of these plants.

The flowers commence to open about five o'clock in the afternoon, and at seven o'clock in the evening it is at its full glory; at nine o'clock in the morning the flowers close for the day.

From one plant taken in our greenhouse, last fall, we have made over two hundred and fifty plants. It is easily grown from cuttings, and no plant is more easily raised, and no other gives the satisfaction that this one will to any one who will be at the trouble of sowing

the seed. One evening, last week, we sent a plant in a ten-inch pot to a neighboring house, where a church sociable was being held, it had one hundred and forty blossoms on it; every one of them was fully open, and some of the flowers measured four inches in length, the fragrance from it filled every room in the house. It was admired by every one present, and next morning my gardener had a long list of orders to fill for this plant.

Friends, try it. Get a package of seed, and I know you will be well pleased and paid for the little trouble there will be in it. Ladies, this is the way to get your husbands to like plants and flowers. Instead of buying small plants, buy something that has some show to it; it costs no more to raise them, and you will soon get your husbands to appreciate your interest in and your love for flowers and plants.

THOMAS W. DURSTON, *Syracuse, N. Y.*

THE STRIPED BEETLE.

A writer in the *Rural New Yorker* says there is a practical method of routing these pests, and it is so cheap and simple, and so quickly applied, that everyone should know of it. We have no recipe for the mixture, but into a pailful of common land plaster we put sufficient spirits of turpentine to give the former a strong flavor of the latter. Perhaps a tablespoonful of turpentine to two or three gallons of plaster would be the right proportion. In the morning after the vines have shown up nicely, a man goes through the patch, taking two rows at a time, and scatters a small pinch on each hill. The turpentine drives away all striped beetles, and we seldom use the second application.

THE ORANGE GROWER'S FRIEND.

The Cottony Cushion Scale, *Icerya Par-chasi*, the greatest insect enemy the orange growers of California have had to contend with, and which has threatened the utter extinguishment of the whole industry, has been totally destroyed. This has been accomplished by the introduction from Australia of an insect enemy of the Scale, a ladybird known as *Vedalia cardinalis*. Mr. ALBERT KÆBELE, entomologist, was sent out to Australia in 1889 in connection with the Commission

having charge of the exhibit from this country at Melbourne. The Australians thought the enemy of the Scale was a minute fly, *Lestophanes*, but Mr. KÆBELE made a careful examination and soon learned that the great enemy of the Cottony Cushion Scale was *Vedalia cardinalis*. He at once sent to California some colonies of the insects and repeated it a number of times. They arrived safely and rapidly propagated, and have now cleared the State of the destructive Scale. The horticulturists of California are preparing a grateful testimonial to the worth of Mr. KÆBELE's work by raising the sum of \$2,500 to invest in a neat cottage in Alameda, Mr. K.'s home. This is very proper and commendable.

AUSTRALIAN FORESTS.

As a matter of fact, there are no forests in the world where so multiform and continuous fragrance is perceptible as in the "bush" and "fern" of Australia; the flowers and flowering shrubs are often as exquisitely scented as they are brilliantly colored, and the accacia, the palm, the fern-tree, and many others, afford grateful and delightful shade from the scorching rays of the summer sun.—*Harper's Magazine* for May.

AMERICAN HORTICULTURE.

The American Horticultural Society met in Austin, Texas, this year. The sessions were held in the hall of the House of Representatives, at the State capitol. Being called to order by Vice President T. V. MUNSON, of Denison, Texas, in the absence of President EARLE PARKER, of Ocean Grove, Mississippi, who was prevented from attendance by an accident.

Letters were read by the Secretary from members unable to attend. The usual speeches of welcome and responses were made. The attendance was small, principal reason for which was assigned to the prevalence of *la grippe*.

At the second day's session, Mr. MUNSON, of Denison, was complimented by members in discussing grape culture, and in a few remarks, in response, stated that there was a greater number of native species of grapes in the United States than in any other country, and more in Texas than in all the rest of the States.

Mr. H. M. STRINGFELLOW gave his experience in pear culture at Hitchcock, only a few miles from the Gulf coast, where he had achieved great success with the Keifer and Le Conte varieties.

Mr. HOWELL, of Dallas, caused an incredulous smile on the faces of many delegates by speaking of the adaptability of Texas for apple culture.

Dr. RAGLAND, of Pilot Point, Texas, stated that in his vicinity apples were taking the place of peaches.

Messrs. ONDERDONK and STRINGFELLOW cited facts to show that the apple is a success in Southern Texas, contradicting the assertion of Professor BRUNK, of the Texas Agricultural and Mechanical College, that only the northern portions of the State need try apple culture.

A paper on the relations of railroads and horticulturists created some discussion.

Secretary W. H. REAGAN submitted his report and tendered his resignation, owing to the pressure of other business and increasing years.

W. N. OHMER, of Ohio, addressed the society on pear culture, and gave some interesting hints to those about to start pear orchards, warning them against too many varieties. Some discussion followed, and Professor BRUNK read a paper on the Le Conte pear.

G. W. CAMPBELL, of Ohio, the veteran horticulturist, gave his experience in grape culture, and illustrated in simple and graphical terms the method of hybridizing grapes.

A paper by Professor GEORGE HUSSMAN, of Napa, California, on propagating the grape by grafting, was read. It pointed out the advantages gained and the best methods.

A paper by D. CARPENTER, of Missouri, on the apple, called forth discussion, participated in by Professor BRUNK, Messrs. J. M. HOWELL, STRINGFELLOW, ONDERDONK, and others.

A paper by Mr. E. T. HOLLISTER, on the railroad in horticulture, was read.

Mrs. S. E. SHERMAN, of Salado, Texas, read a paper on the importance of the busy bee in horticulture.

On the third day Colonel STONER, of Louisiana, spoke on pear blight, suggesting that trimming immature growths from the wood was preventive.

Dr. REDPATH donated the proceeds of

a lecture the night before to the association, and was elected a life member.

President EARLE PARKER, of Mississippi, was re-elected; Secretary REAGAN was elected Vice President; Professor POPENOE, of Kansas, Secretary, and J. C. EVANS, of Missouri, Treasurer.

A paper on the Chrysanthemum, by the late PETER HENDERSON, of New York, was read by Mr. SAUNDERS, of Chicago, together with a sketch of Mr. HENDERSON.

A letter was read suggesting that the American Horticultural Association be placed in charge of the horticultural exhibit at the world's fair.

A resolution, forwarded by horticultural editor HALE, of Connecticut, requiring that special action be taken by census officers for gathering data on horticultural subjects, was adopted, and a committee appointed to wait upon Superintendent PORTER.

A paper, by a Californian, on the bamboo of Japan, was read by the Secretary. The writer recapitulates scores of uses of the bamboo, and makes it out a marvelous plant. Professor B. E. FERNOW, United Commissioner of Forestry, however, threw cold water on the bamboo.

In the afternoon a paper by CLINTON STEVENS, of California, on banana culture, was read.

Mr. HOWELL, of Dallas, read a paper on "Horticulture on the Staked Plains."

A discussion on traveling tree sellers resulted in several resolutions being offered for regulation by Congress or other legislative bodies, and finally the whole subject was referred to a committee, which later reported against the power of Congress to regulate tree peddlers.

A paper on olives in California was read.

Colonel MUNSON read a memorial from the Texas Ladies' Temperance Union, advocating grape juice for table use; referred to committee on fruits.

On the fourth day an essay was read by Professor FERNOW, on tree culture in forest planting.

The Auditor's report was read and adopted.

Mr. L. L. FOSTER, Commissioner of History, Statistics and Agriculture of Texas, spoke briefly, sweeping away theories that had been advanced to account

for the treelessness of the Texas plains. He said fires had kept down forest growth, there being sufficient rain, and that since the fires ceased forest growth is springing up.

A report from the committee on transportation of fruits recited complaints against the railroads, and especially the express companies, and submitted a memorial to Congress to amend the interstate commerce law so as to empower the Commissioners to regulate the transportation of fruit. They thought railroads should provide fruit cars, and rates should be regulated with some regard to the cost of the fruits shipped. They contended that freight charges eat up the full value of the fruit. They would appeal to the railroads, and ask Congress to authorize the interstate commerce commission to regulate express companies, as well as railroads. Adopted. Adjourned.

After the adjournment of the American Horticultural Society, the members visited many of the principal points in the State, including San Antonio, Galveston, Fort Worth, Dallas and other points. They expressed themselves as highly pleased with their reception and entertainment, though the limited time allowed them prevented the citizens showing them as full attention and as much hospitality as they desired to. A notable experience to most of the party was a visit, on invitation of Mr. H. M. STRINGFELLOW, to Hitchcock, a small station fourteen miles from Galveston, where one hundred and thirty-five quarts of luscious, ripe strawberries with cream had been provided for them by Mr. STRINGFELLOW and his neighbors. This was on the 25th of February.

R. B. SPANGLER.

SLOPS FOR TREES.

Are fruit and forest trees killed by wetting with slops thrown every day on the soil over their roots?

Is coarse manure directly against them injurious, and if so, how far away ought it to be?

Is the mould in wet ground injurious?

Is there a difference between it and the leaf-mould, said to be good for plants?

Cannot trees be killed by too much wetting?

M. E. H.

It is easy to imagine cases where trees might be injured by an excess of slops thrown over their roots. One of these would be where the drainage was not

any too good, in which case the soil would soon become sour and unsuitable for the roots. Another would be when the soil contained solutions that in themselves might be injurious. Nothing will injure a tree much quicker than to keep a pile of unfermented manure under it. Even large forest trees will soon resent such treatment, as we have had occasion to observe.

Mould forming in moist ground indicates too much moisture, lack of drainage and want of sunlight. Soil in this condition is unsuitable for vegetation of any kind.

What is called leaf-mold is merely the dust or soil of decayed leaves, and this mixed with soil from the field or garden and a little sand makes an excellent potting material for plants.

Trees and vegetation can be killed by too much water. A well drained soil is the foundation for field and garden culture.

ABOUT SOME HOUSE PLANTS.

How can I propagate the dwarf pomegranate and the cyclamen?

What can I do with my primroses and cyclamen and Fred Dorner pelargonium, this summer?

What is the matter with my Storm King fuchsia? I have had it a year, it grows nicely, but it has had no bud or bloom; it is nearly two feet high, and is in a four-inch pot.

I have a Begonia rubra nearly six feet high, and not a branch or leaf on it, except for about a foot of the top, which is a mass of leaves and bloom. The top has to be tied up to support it. Will it do to cut it off within a foot and a half or two feet from the root? The pot seems to be full of roots.

H. E. R., *Kansas*.

The pomegranate can be multiplied by cuttings of the young shoots, but it requires some skill and suitable conveni-

ence for doing it. We should not expect an unfurnished amateur to have much or any success in doing it.

The cyclamen can be raised from seed.

Most house plants can be kept over summer in good condition by selecting a spot in the garden that is partially shaded by a tree, or fence, or building, and thoroughly plunging the pots into the soil up to or over their rims. Attention will have to be given in watering as they may need it.

The fuchsia may be kept over summer in the same way, and in September lift it and repot it in fresh soil, and cut back the top to six or eight inches, and thus cause it to make a new head. If the ends of the shoots had been pinched back when a small plant it would have made more branches and not grown so tall. If it does not bloom this spring it will not until another twelve month.

The Begonia can also be plunged outside, and after a time will have ceased to bloom, or nearly so. When it thus shows itself to be in a partially dormant state the stems can be broken at a height of ten or twelve inches without removing the upper part entirely. Let it hang over but support it so that it will not tear down and break away. In this condition there can be a slight flow of sap, and the buds below the fracture will swell and in time push out some leaves. The old head can then be cut away. In this manner a head with several branches will form, and as the shoots grow their ends can be pinched, and thus cause them to make more branches. The plants should not be allowed to run up to single stems. Repot the plant when it begins to push its new leaves.



OUR YOUNG PEOPLE.

HOW CYRUS GOT RICH.

IN TWO CHAPTERS.—CHAPTER I.

Splash, splash, drip, drip, creak, creak, was what the ponderous old water-wheel had been doing for years to the great entertainment of the junior members of the Drayton household.

True, Cyrus had outgrown his old delight in the mimic water-wheels which the leakage in the elevated conduit kept madly flying; but Archie was now old enough to enjoy these. Besides, the wheel being hung so that half its diameter swung in a pit along side the mill, its ever moist and mossy surroundings were easily accessible.

Here it was that Juliet and Edith, often joined by uncle Simeon's girls from the village, were constantly finding new varieties of lichens, and subjecting them to the sorcery of their magnifying lens, the while there were many exclamations of "Oh!" and "Ah!" and "Did you ever see the like?"

In vain did they try to enlist the interest of Cyrus. His leisure, just then, was spent in reading a book describing how the fortunes of prominent men of wealth had been made.

Shortly after this discovery the girls noticed patches of something green floating on a little pool nearly hidden behind the wheel. Upon investigation they found it was composed of tiny, scale-like plants, each having a rootlet on the under side. In a few days more the surface of the pool was entirely covered. Wonder of wonders! how did such mites of plants propagate themselves without seed, or offshoot, or any other known method of increase? That mystery must be investigated.

So some of the green scales were deposited in a vessel of water and borne to the house. Here Cyrus' interest became enlisted, and he soon discovered that a fissure was formed in the thin edge of a scale from whence issued a perfect plant all ready to join the surrounding flotilla and commence business for itself.

"Such a way," he pondered, "for plant

life to increase," as he watched a little scale newly *born* into the world; soon deciding that the old wheel had developed some of the very beginnings of things for their especial study. Suddenly it dawned upon him that further research in that direction might prove fascinating.

At this crisis of interest uncle Simeon Hunt and aunt Abigail, with their daughters, came to spend the day, their quaker thee's and thy's seeming, as usual, to impart a more exalted tone to conversation.

At the dinner table the pretty plat of fresh mosses, starred with white blossoms, reminded the host to tell uncle Simeon of his decision to enclose the water-wheel. This, he said, was to prevent the frequent loss of time in severely cold weather by the clogging of ice on the wheel, as heretofore had occurred.

(This was just before the invention of the turbine wheel—that little iron marvel—and prior to the application of steam as a motor for western mills.)

At the first intimation of Mr. Drayton's plan, a cry of dismay broke from the assembled cousins.

"The only picturesque thing we have," said Juliet.

"No more strolling artists around, hereafter," added Cyrus.

Then Ruthie Hunt whispered, "An' me an' Archie tant see the pitty water spill out of the pockets any more, neither."

"Anyway, I'll have my water-wheels yet," chimed in Archie.

"And I," added Cyrus, "will have that pool left for 'stock' plants to draw from, while I study their habits more closely and learn how many 'crops' the same plant will bear, and how old the young ones must be before they begin bearing."

Edith's place at table has been suddenly vacated. When found by her mother, she sobbed out, "Dear old wheel—seems just like one of the family; the home won't seem—seem the same——," but here she broke down, and had to be left to herself to recover.

Later on, Cyrus assured his sisters that all their fuss about the wheel was nonsense. "You ought to know," said he, "that nothing of that sort counts where spindles and carders and looms are standing idle, and money is being lost by it."

"O, yes," retorted Juliet, "it's just as mamma says—you're always thinking of the money side, ever since you read that book, and saying you're bound to be a rich man."

"And so I am—you'll see. I'm going to lift father out of that mill—I despise it—or else build him one ten times larger. He's too grand a man to be tied down all his life. Don't you see how he commands respect? Even the mill-hands call him 'Gentleman John.'"

"Say, wasn't that a good one he got off on me, this morning, when I was teasing Archie. The idea of his suggesting that if Darwin could see my grimaces, he might conclude there's a good deal of monkey left in me yet. Ha, ha. I tell you; but he's a trump. He can give the sharpest reproofs in the kindest way, at the same time being as dignified as a Lord Chancellor. No wonder uncle Simeon loves him like an own brother,—says he does. O, but I'm proud of him."

"I wish," rejoined Juliet, "that you'd quit some of your pranks and mischief, and try to make him proud of you."

About this time an artificial pool mysteriously appeared in a shaded angle of the dwelling, surrounded by mossy stones and patches of liverwort. Its depths held various still water treasures, while a flotilla of the scale-plant, which had proved to be "duckweed," or *Lemna trisulca*, floated on its surface.

During the following January, after a night of extreme cold, Mr. Drayton made an early visit to the mill. Hastening to the second floor, whence a low door opened into the wheel-house, he found the little box-stove inside nearly cold, and the new foreman sound asleep by the other one. Heedless of instructions he had turned nearly all the water off the wheel, the remaining portion splashing and freezing as it fell, until the wheel was fast and loaded heavily with ice, the current back of the small stream being so sluggish as to allow the conduit to almost freeze up also.

Mr. Drayton, feeling incensed at the man's carelessness, shook him awake, saying, "Get up, Bryson, and see what your neglect has done. You professed to be an experienced overseer who could lessen my care, and I trusted you. This is a poor beginning, a costly business all around."

"Hit wur not neglect, sir," said Bryson, "hit wur a hextra bit av caution on me part to save up the water for the work to-morrow."

"Yes, and you see how it has worked. If you propose to assume authority and act upon your own notions, you'll be excused from further service as foreman."

This so enraged Bryson that he paled with passion, standing with clenched fists, shaking from head to foot.

"Mr. Drayton, hive an hawful temper. hi 'ave," he said, "hi never forget an haffront, an' you'd better be heasy on me. There be boss men hin Hingland who daren't speak to me the like you spak jist now."

The man's teeth fairly chattered as he stood, literally impotent with rage, a pitiful sight.

"I never keep any one about me of whom I'm afraid," replied Mr. Drayton, noting the man's condition with amaze, deciding at once that he was a dangerous person to have around. "I advise you to control that temper of yours instead of allowing it to master you. Why, man alive, a baby could push you over with one hand. See how you lose your manhood, lose your power of self defence, were it needed—lose even your ability to harm me, were you ever so much inclined."

Hereupon, Bryson, seeing groups of employees filing toward them from the stairway to begin their day's work, slunk away from sight, secretly vowing revenge upon Mr. Drayton in whatever way he could hurt him the worst without criminating himself.

Upon seeing the situation, the disappointed girls returned to their homes, while the men lingered to render service. The wheel-house stove was soon red-hot amid its icy surroundings, and shortly after the men were seated on benches around a larger one in the long room, discussing the situation, while the heavy drippings of melting ice into the wheel-pit was a welcome sound to all, including Cyrus, who was already on hand men-

tally estimating the probable loss from this stoppage.

It was hoped that by evening the wheel might be wrenched loose by thrusting iron bars between the great arms. But when evening came the wheel refused to stir. It was found that an immense mass of ice had formed on the shaft against the wheel and in amongst the arms in a way to hold it firmly fixed.

Finally, one of the men insisted upon entering the wheel-house with an axe to chop away the ice at that point by the aid of strong lights. Mr. Drayton first blocked the wheel, lest it might start unexpectedly and throw him from his slippery footing. But the man's awkward position rendered his strokes ineffectual, and he soon gave it up.

But all were now wrought up to a feeling that the wheel must be cut loose that night.

So, Mr. Drayton, after deciding upon the best footing and position, entered the wheel-house himself, despite Cyrus' earnest protest. Standing with eyes intently fixed, he noticed how his father's powerful strokes sent successive tremors through the ponderous old hulk, and called out that it meant danger.

But Mr. Drayton paused only long enough to point Cyrus to the solid brace blocking the wheel. Then, again the ice chips flew all about him, glinting and scintillating with colored rays, like prisms.

The silent men stood peering inside, watchful and expectant—all eager for the morrow's work. Not a word was uttered, not a movement made.

Suddenly there was a crash.

The large mass of ice had split from the wheel and shaft and plunged thundering below. At the same instant the brace was jostled from its icy supports, while a sharp snapping and creaking sound ran through the unequally weighted wheel as it—*turned over*.

Where was Mr. Drayton?

For an instant, all stood aghast, completely horror stricken. Then Cyrus, with a wild cry of "O, my father!" rushed madly inside the icy wheel-house.

Instantly, Proctor—a quiet, unobtrusive workman—sprang forward and drew him back, bidding some one hold him as he struggled to return. Then calling

loudly to Mr. Drayton, and getting no answer, he swiftly hooked together the suspension wires of the mill lamps and lowered a light into the pit, again calling and shouting for some response. But not a sound broke the silence.

Had he been crushed to death in the narrow space between the wheel and its surroundings, or, escaping that, had he fatally struck the stone wall of the pit below, or was he only bruised and stunned into unconsciousness?

The hitherto retiring Proctor, seeing that all around him were paralyzed with fright, immediately assumed control of the situation.

"Mount a horse, quickly," he shouted to a young man with blanched face; "go to the village for a doctor. Then get Mr. Hunt on to your horse, and send him to us quickly. Cyrus, you help him to get off, but don't go near your mother yet. God help the blessed woman, and save our Gentleman John for her and for us."

Then two fire ladders were quickly clamped together and let carefully down into the pit, ropes having first been made fast to the upper rungs that the men might help steady them in their icy position. Next, Proctor hastily descended with a lantern on one arm, using both hands to steady himself on the slipping, sliding ladder.

Presently, in answer to questions, he shouted up, "Yes, I've found him."

"No, not in the water—doubled up on a gravel heap in an angle of wall."

"Can't tell yet if alive or not."

"Yes, yes; you can help. Listen sharp, and work fast. Get those short ropes with wool-hooks at either end, you know. Bind them together midway their length with a long rope, and let them down here. I'll hook them into his clothing from head to foot, then you can pull him up, slowly, while I ascend the ladder and steady him, keeping myself between it and him, that he may strike nothing. Make haste."

Cyrus, having seen his man gallop off to the village, rushed back to the mill and ran against Bryson in the darkness, unwisely exclaiming, "My father has fallen in the wheel-pit; if he's killed it's all your fault," leaving the man muttering invectives.

Joining the workmen, Cyrus made for

the ladder, calling out, "Now, men, leave me alone; I know what I'm about. Do you suppose I'll let my father lie there and not go to him? Don't hinder me. If there were only one of you, I'd knock him blind. Get away, I tell you!"

The two men restraining Cyrus called

to Proctor to know if he might join him.

"No, Cyrus," he answered, "you'd only hinder by occupying needed space. But you can really be of service by getting Bryson's cot in good shape and placing it near the stove, to be ready."

MARIA BARRETT BUTLER.

OUR DICK. .

One bright morning in the latter part of October, 1888, while straightening the library, I heard a flutter of wings, followed by an exclamation from my daughter, "O, mamma, a canary." Sure enough, perched on the back of a chair, with drooping wings and panting body, was a very tired but pretty genuine canary, pale yellow color, with just a line of darker shade on each wing. He seemed very shy, and, weary as he was, we had some difficulty in catching and transferring him to a cage. In all my experience with birds I have never kept a caged prisoner. I do not believe they are happy confined within such narrow limits. I want all things about me to be happy, so my birds have their liberty. I confess results are not altogether satisfactory for birds, like the members of the higher order of mammalia, if given an inch will usually take an ell; consequently I am most of the time birdless. But I have the satisfaction of feeling they have at least had a brief season of enjoyment. The little stray was so shy at first that he would not allow me to get very near him, but by leaving the cage door open and allowing him to go where he chose, he soon became tamer. In a little while he would eat from my hand, then take seeds from my lips, and as he lost his sense of fear his education progressed rapidly. I never saw a greater amount of intelligence exhibited among the lower orders than day by day he proved himself to possess.

I should like to keep a bird long enough to develop its greatest possibilities. I believe I would have a specimen from "wonderland." This one soon learned to come at my call wherever I might be. He loved me, I think, more than any one else, possibly because I was with him more, and taking his place on my shoulder would stay there while I went all over the house, up and down

stairs, even out on the porch. I then began taking him to my friends', and finally could go all over the neighborhood with him on my shoulder. He never left his place, and finding him so tractable I took him out into the yard and allowed him to hop around among the flower beds, picking at the dried leaves. He enjoyed these airings immensely, but when I thought he had been out long enough, for I had to keep a constant watch for cats, I would simply say, "Come, Dick, time to go in," and he usually came instantly and went contentedly into the house with me. Sometimes, however, he perched his head to one side and very saucily gave me to understand he was not ready. All I had to do on such occasions was to say "good bye," and turn as though going to leave him. Quick as a flash the dear little fellow was in his old place. He did not like to be alone, and was very fond of being talked with. I say "with" understandingly. When I sat down to read he would fly to my shoulder, talking all the time, then on to my book or paper, then, if I still gave him no attention, would hop on my breast, dance backward and forward, picking at my lips until in utter desperation, I laid aside my reading and devoted myself to him. He was a radical "cold waterite," and bathed twice a day, if I permitted it, and if I did not prepare for him at least once a day, he asked me to do so in very plain language. Watching me at my work, whenever I started for the kitchen with a dish in my hand he would immediately fly on the edge of it, flutter his wings, dip his bill into it, and look into my face with his bright little eyes, saying, "tweet, tweet," never leaving his position until I filled the vessel with water and placed it on a chair, where he proceeded to make a very thorough bath. He was fond of eating at the table with the family, so I pre-

pared a corner for him, and he was always on hand at meal time. When he wanted a drink he would wait until some one raised a goblet, when he was instantly on the hand and really tip-toeing to get his head into the glass. Of course, he always got his drink, when he flew contentedly away.

I kept my plants up stairs, and he liked nothing better than to be at liberty among them. I did not like to leave him there for fear of an accident, so I made him go down when I did. He soon learned that his time was limited, and the cutest things he ever did were when I tried to get him when I was ready. He would come to my shoulder and stay until I started down the steps, then fly straight back through the hall and into the room with the plants. Of course, I went back; he would allow me almost to touch him, and then sliding out from under my hand would elude my grasp, and hop just a few paces away, finally getting on the floor and under the bed. I never saw a child look any more saucily defiant than did this midget, away beyond my reach, with head to one side, body flattened, and still as a mouse, he seemed to say, "get me, if you can." It was too funny for me to do anything else than laugh, and he soon learned he could outwit me in that manner, and took advantage of it until I was obliged to leave him down stairs. He was fond of pie and cake, and we had to shut him out of the room when there was any of either eatable on the table. My girl sometimes forgot this, and one day, when my husband was away on his round of visits, and was late to dinner, she let the table stand. The doctor soon came in, found

Dick in the height of his glory, making way with his pie at a rapid rate. Another time I baked a cake for the "missionary tea," filling the layers with icing and nuts. It was placed on the dining table to cool and allow the filling to harden. I went about some other work, forgetting all about our busy-body. If soon remembered, however, and hurried in to find him perched right in the middle of the cake, making the nuts fly. I ran to him, scolding and trying to drive him away, but he spread out his wings, chattered and scolded, worse than I did, and just refused to leave his new found dainty. I took him away, and as he left no "foot-prints in the sands of time," the ladies of the missionary society were none the wiser.

Our pet was the neighborhood wonder, and we all loved him dearly. Alas, that I must tell this all in the past tense. When "the melancholy days" of house cleaning came, last spring, he disappeared. He never liked men, and would not "make up" with the "male persuasion," and I think the men who came to renovate the house, leaving the doors all open behind them, frightened him, and seizing the opportunity, he flew away. I soon missed him and traversed the town almost, in search of him, but never saw him again. I do not like to think of his probable fate, but I am sure if he had been where he could have heard my call, he would have come to me. His tameness would have made him an easy prey, and I confess there were tears in my eyes and sadness in my heart for many a day, as I missed the bright ways, the sociable "tweet, tweet," and the dainty presence of Our Dick.

LIZZIE D. CASE.



EDITOR'S MISCELLANY.

NURSERYMEN'S CONVENTION.

The fifteenth annual meeting of the American Association of Nurserymen, which convenes at the Park Avenue Hotel, New York City, June 4th, promises to be a notable event.

Twenty-five practical men will be present with off-hand talks, or papers on topics of great interest, including Professor I. P. Roberts, L. H. Bailey, J. L. Budd, B. E. Fernow, B. T. Galloway. Also Hon. H. E. Van Deman, Chief of the Division of Pomology, A. S. Fuller, and many of the eloquent and silvery voiced speakers so well known to nurserymen. Three hundred or more members will discuss the subjects presented.

Reduced fare has been secured on all railroads east of Chicago, and reduced prices also at the new fire-proof hotel. For particulars address

CHAS. A. GREEN, Secretary,
Rochester, N. Y.

THE FLORISTS' MEETING.

The Society of American Florists will hold their annual meeting and exhibition on the 19th, 20th, 21st and 22d of August, at Boston. The allotment of space to exhibitors is entrusted to a committee of the Gardeners' and Florists' Club of Boston. A charge of twenty-five cents a square foot for floor and wall space will be made to each exhibitor. Applications for space should be addressed to F. McCarthy, Music Hall Place, Boston, Mass.

During the week of the convention the Massachusetts Horticultural Society will hold a great exhibition in a mammoth tent on Boston Common. The Secretary of the American Florists' Society is Wm. J. Stewart, 67 Bromfield St., Boston, Mass.

THE FORSYTHIAS.

Wm. Falconer states in the *Cultivator and Country Gentleman* that Andrew S. Fuller asserts "that instead of having three distinct species in cultivation, namely, *F. suspensa*, *F. Fortunei*, and *F. viridissima*, we have only one, and these kinds are merely forms of the one species. He has raised all three from seed saved from an isolated plant of *Fortunei*, and last winter he sent us about a hundred little seedlings in proof of his conclusion." If the variation in the seedlings of this plant is so great it is probable that some good results, in the way of improved varieties, might be attained after a time by successive selections and propagation.

GREEN FLY AND TOBACCO DUST.

The article on "The Bothering Green Fly" in the May number should have been signed T. W. D., instead of M. D., Syracuse, N. Y.; the contributor was Thos. W. Durston. He also wishes us to state, should any of the readers of VICK'S MAGAZINE desire some of the tobacco dust and cannot get it where one lives, he will mail a good sized package on receipt of twenty-five cents.

INSECT LIFE.

Number 9 of Volume 2 of this serial is at hand. It is full of valuable matter in relation to injurious insects and the means of destroying them. Thanks to the Department of Agriculture.

FRUITS, AND HOW TO USE THEM.

This is a practical manual for housekeepers, and contains nearly seven hundred recipes for wholesome preparations of foreign and domestic fruits. It tells how to put fruit on the table, and how to prepare the various forms, baked, stewed, canned, jellies, preserving, etc. There are few people, comparatively, who are not fond of fruit, and their use of it expands with their knowledge of its adaptation, and this work, prepared by Mrs. Hester M. Poole, will be found a valuable assistant in every household. Fowler & Wells, Publishers, 785 Broadway, New York.

ART IN HOUSE BUILDING.

Smith & Robinson, Architects, of Altoona, Pa., have lately published a series of designs of buildings of different styles and expense. These consist for the most part of dwelling houses, but include a design for a church and a schoolhouse. The design for a "Summer Cottage" in this number is one of the series. It is a very handsome set of plates. The price is seventy-five cents, and will be sent on application to the above named firm.

ECONOMIC ENTOMOLOGY.

From Secretary Rusk we have received a volume just issued on the Bibliography of the more important contributions to American Economic Entomology, by Samuel Henshaw. This is a valuable directory to the writings of C. V. Riley and B. D. Walsh, by means of which the great mass of their writings on the subject referred to becomes accessible for specific examination.

INJURIOUS AND OTHER INSECTS.

Our thanks are due to Dr. J. A. Lintner, State Entomologist, for copies of the Fourth and the Fifth Reports on the injurious and other insects of the State of New York. These reports are of high practical as well as scientific value, giving as they do the habits and life histories of insects, and the means of successfully combatting those which prey upon our cultivated plants.

OTHER PUBLICATIONS RECEIVED.

Transactions of the Massachusetts Horticultural Society for the year 1888.

Report of the Fruit Growers' Association of Ontario for 1889.

Report of the Board of Control of the State Agricultural Experiment Station at Amherst, Mass., 1889.

Proceedings of the New Jersey State Horticultural Society at the Fifteenth Annual Meeting in December, 1889.

Report of the Board of Control of the New York Agricultural Experiment Station, (Geneva, N. Y.), for the year 1889.

Proceedings of the Western New York Horticultural Society, at its thirty-fifth annual meeting at Rochester, 1890.

Our Baby's First and Second Years, by Marion Harland. A book of sixty-four pages, full of valuable hints about the care of infants and children, will be sent free upon application to Mess. Reed & Carnrick, 447 and 449 Greenwich St., New York.



PELARGONIUM COUNTESS OF DERBY

